

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Dawn Garrett Examiner #: 76107 Date: 5/18/2004
 Art Unit: 1774 Phone Number: 272-1523 Serial Number: 10/622,504
 Mail Box and Bldg/Room Location: Rm 5C75 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Material for an Electroluminescent Element and
Electroluminescence Element Using the Same
 Inventors (please provide full names): SATOSHI SEO, HIROKO YAMAZAKI

Earliest Priority Filing Date: 7/31/2002 Japan 2002-222451

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search compounds [I] to [II] in combination with the described polymer of cl. 1-11 as a material (composition).

Please show results of ~~structures without~~ material without a utility

also show results combined with utility as part of an electroluminescence element.

Thank you.

STAFF USE ONLY

Searcher: K. Fuller

Searcher Phone #: _____

Searcher Location: _____

Date Searcher Picked Up: _____

Date Completed: 5/21/04

Searcher Prep & Review Time: 35

Clerical Prep Time: _____

Online Time: 150

Type of Search

NA Sequence (#) _____

AA Sequence (#) _____

Structure (#) 12

Bibliographic _____

Litigation _____

Fulltext _____

Patent Family 1

Other _____

Vendors and cost where applicable

STN ✓

Dialog _____

Questel/Orbit _____

Dr.Link _____

Lexis/Nexis _____

Sequence Systems _____

WWW/Internet _____

Other (specify) _____

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FILE 'REGISTRY' ENTERED AT 15:31:23 ON 21 MAY 2004

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STRUCTURE FILE UPDATES: 20 MAY 2004 HIGHEST RN 684211-73-2

DICTIONARY FILE UPDATES: 20 MAY 2004 HIGHEST RN 684211-73-2

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2004

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FILE COVERS 1907 - 21 May 2004 VOL 140 ISS 22

FILE LAST UPDATED: 20 May 2004 (20040520/ED)

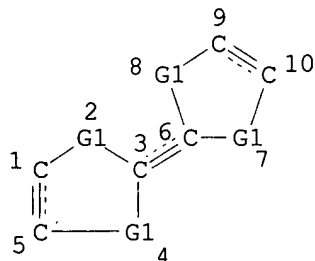
This file contains CAS Registry Numbers for easy and accurate substance identification.

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L11	24589	SEA	FILE=REGISTRY	ABB=ON	591.49.52/RID
L12	5505	SEA	FILE=REGISTRY	ABB=ON	L11 AND 2/O
L13	1892	SEA	FILE=REGISTRY	ABB=ON	L12 AND 2/NR
L16	350	SEA	FILE=REGISTRY	ABB=ON	L4 AND CYANO AND 1/NR
L17	259	SEA	FILE=REGISTRY	ABB=ON	L16 AND 2-4/N
L21	81850	SEA	FILE=REGISTRY	ABB=ON	1839.6.36/RID
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KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

L24 44 SEA FILE=REGISTRY ABB=ON L22 AND DINITRIL?
 L25 121 SEA FILE=REGISTRY ABB=ON L23 OR L24
 L27 134 SEA FILE=REGISTRY ABB=ON L22 AND 1/O AND OXO
 L28 253 SEA FILE=REGISTRY ABB=ON L25 OR L27
 L31 3910 SEA FILE=REGISTRY ABB=ON 16.145.6/RID
 L32 79933 SEA FILE=REGISTRY ABB=ON (DINITRIL? OR DICYANO?)
 L33 210 SEA FILE=REGISTRY ABB=ON L31 AND L32
 L34 STR

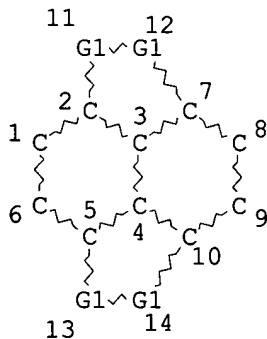


VAR G1=S/SE/TE
 NODE ATTRIBUTES:
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE

L36 SCR 1839
 L38 SCR 2022
 L39 SCR 1935 AND 2019
 L40 SCR 1926 AND 2019
 L42 SCR 2127
 L44 SCR 1842
 L46 SCR 134 OR 1773
 L48 3373 SEA FILE=REGISTRY SSS FUL L34 AND L36 AND (L38 OR L39 OR L40)
 AND L46 NOT (L42 OR L44)
 L52 167 SEA FILE=REGISTRY ABB=ON 591.49.33/RID
 L53 77 SEA FILE=REGISTRY ABB=ON L52 AND (DICYANO? OR DINITRIL?)
 L56 28 SEA FILE=REGISTRY ABB=ON 2508.17.32/RID
 L57 15 SEA FILE=REGISTRY ABB=ON L56 AND 4/N
 L58 13 SEA FILE=REGISTRY ABB=ON L57 AND (DINITRIL? OR DICYAN?)
 L61 STR



VAR G1=S/SE/TE
 NODE ATTRIBUTES:
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 14

STEREO ATTRIBUTES: NONE

L63 666 SEA FILE=REGISTRY SSS FUL L61
 L66 2542 SEA FILE=REGISTRY ABB=ON 46.160.3/RID
 L67 199 SEA FILE=REGISTRY ABB=ON L66 AND 2/NR AND (2/S OR (1/S AND
 (1/TE OR 1/SE)))
 L71 7 SEA FILE=REGISTRY ABB=ON L66 AND 2/NR AND (2/TE OR (1/TE AND
 (1/S OR 1/SE)))
 L74 363 SEA FILE=REGISTRY ABB=ON 46.162.2/RID
 L75 55 SEA FILE=REGISTRY ABB=ON L74 AND 2/NR AND (2/SE OR (1/SE AND
 (1/S OR 1/TE)))
 L76 7 SEA FILE=REGISTRY ABB=ON C6N4/MF
 L77 8 SEA FILE=REGISTRY ABB=ON C10N6/MF
 L78 10 SEA FILE=REGISTRY ABB=ON (L76 OR L77) NOT 1-20/NR
 L79 24096 SEA FILE=HCAPLUS ABB=ON L5
 L80 12745 SEA FILE=HCAPLUS ABB=ON L13
 L81 5026 SEA FILE=HCAPLUS ABB=ON L17
 L82 381 SEA FILE=HCAPLUS ABB=ON L28
 L83 85 SEA FILE=HCAPLUS ABB=ON L53 OR L58
 L84 3342 SEA FILE=HCAPLUS ABB=ON L78
 L85 74 SEA FILE=HCAPLUS ABB=ON L33
 L86 3409 SEA FILE=HCAPLUS ABB=ON L48
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 L89 43572 SEA FILE=HCAPLUS ABB=ON (L79 OR L80 OR L81 OR L82 OR L83 OR
 L84 OR L85 OR L86 OR L87 OR L88)
 L92 21 SEA FILE=HCAPLUS ABB=ON L89 AND (RESIN# OR ?POLYMER?) (6A)?CONJ
 UGAT? (5A)?CHAIN?

*Compounds
 1-11 from
 structure search
 or ring ID's
 or
 MF*

=> D L92 ALL 1-21 HITSTR

L92 ANSWER 1 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2003:585700 HCAPLUS
 DN 139:246283
 ED Entered STN: 31 Jul 2003
 TI π -Conjugated Polymers Exhibiting a Novel Doping Based on Redox of Side
 Chains
 AU Nishiumi, Toyohiko; Higuchi, Masayoshi; Yamamoto, Kimihisa
 CS Kanagawa Academy of Science and Technology (KAST) and Department of
 Chemistry, Faculty of Science and Technology, Keio University, Yokohama,
 223-8522, Japan
 SO Macromolecules (2003), 36(17), 6325-6332
 CODEN: MAMOBX; ISSN: 0024-9297
 PB American Chemical Society
 DT Journal
 LA English
 CC 35-7 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 36, 72, 76
 AB Polyphenylene and polythiophene derivs. that have N,N'-diphenyl-1,4-
 phenylenediamine (PDA) units were synthesized using the

palladium-catalyzed Suzuki coupling or cross coupling routes. Each prepared polymer has good redox activity, and the polyphenylene derivs. showed two redox couples in acetonitrile/1 M trifluoroacetic acid electrolyte, whereas the polythiophene derivs. show only one redox couple under the same conditions. The electronic conductivity of the polythiophene derivs. was dramatically enhanced (0.1 S/cm) by the one-electron oxidation of the PDA unit (0.4 V, vs. Ag/Ag+) upon injection of a radical cation into the main chain from the PDA unit. Spectroelectrochem. data showed that the radical cation of the thiophene-substituted PDA was more delocalized than that of the phenylene-substituted unit. Electrochem. anal. of the model compds. revealed that the injection of radical monocation radical carriers into the main chain is based on electron transport between the intramol. PDAs.

ST diphenylphenylenediamine polyphenylene conjugated polymer prepn Suzuki coupling polymn; polythiophene diphenylphenylenediamine prepn redox activity electronic cond; electron oxidn diphenylphenylenediamine radical cation injection **conjugated polymer chain**;
conducting polymer doping radical cation redox side chain

- IT Polymerization
(Suzuki coupling and cross-coupling; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)
- IT Radical ions
(cations; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)
- IT Polymers, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(conjugated, polyphenyls and polythiophenes, diphenyl-phenylenediamine side-chain; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)
- IT Polyphenyls
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(diphenyl-phenylenediamine side-chain; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)
- IT Redox reaction
(electrochem.; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)
- IT Redox potential
(of diphenyl-phenylenediamine side group; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)
- IT Conducting polymers
(polythiophenes, diphenyl-phenylenediamine side-chain; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)
- IT Cross-coupling reaction
Dehydration reaction
Doping
Suzuki coupling reaction
(preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)
- IT Electric conductivity
(redox; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls

- and polythiophenes)
- IT Electrochemistry
(spectroelectrochem., UV-visible; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)
- IT Electric current carriers
(transport; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)
- IT 14221-01-3, Tetrakis(triphenylphosphine) palladium
RL: CAT (Catalyst use); USES (Uses)
(coupling polymerization catalyst; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)
- IT 7550-45-0, Titanium tetrachloride, uses
RL: CAT (Catalyst use); USES (Uses)
(dehydration reaction catalyst; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)
- IT 409318-68-9P, 2,5-Dibromo-N,N'-diphenyl-1,4-Benzenediamine
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate and monomer and model compound; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)
- IT 495383-59-0, 2-Bromo-5-methyl-N,N'-diphenyl-1,4-Benzenediamine
RL: RCT (Reactant); RACT (Reactant or reagent)
(intermediate; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)
- IT 495383-60-3 495383-63-6
RL: PRP (Properties)
(model compound; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)
- IT 599575-92-5P 599576-00-8P 599576-06-4P 599576-14-4P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(model compound; preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)
- IT 409318-69-0P, Benzene-1,4-diboronic acid-2,5-dibromo-N,N'-diphenyl-1,4-Benzenediamine copolymer 409318-70-3P, Benzene-1,4-diboronic acid;2,5-dibromo-N,N'-diphenyl-1,4-Benzenediamine copolymer, SRU
409318-71-4P 409318-72-5P 599576-55-3P 599576-60-0P 599576-64-4P
599576-72-4P 599576-79-1P 599576-87-1P 599576-94-0P 599577-04-5P
599577-12-5P 599577-20-5P 599577-27-2P 599577-33-0P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and polythiophenes)
- IT 62-53-3, Aniline, reactions 98-80-6, Benzeneboronic acid
1633-14-3, 2,5-Dibromo-1,4-benzoquinone 16245-79-7,
4-n-Octylaniline 54663-78-4, 2-(Tributylstannyl)thiophene 145483-63-2,
2,5-Bis(tributylstannyl)thiophene
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation and carrier transport based on redox-generated radical cation from phenylphenylenediamine side-group to main-chain polyphenyls and

polythiophenes)
 IT 599575-85-6P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation and carrier transport based on redox-generated radical cation
 from phenylphenylenediamine side-group to main-chain polyphenyls and
 polythiophenes)

RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD

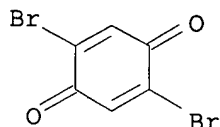
RE

- (1) Bao, Z; Chem Mater 1993, V5, P2 HCAPLUS
- (2) Bao, Z; J Am Chem Soc 1995, V117, P12426 HCAPLUS
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- (23) Yamamoto, T; Macromolecules 1999, V32, P8886 HCAPLUS
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- (25) Zotti, G; Macromolecules 2002, V35, P2122 HCAPLUS

IT 1633-14-3, 2,5-Dibromo-1,4-benzoquinone
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation and carrier transport based on redox-generated radical cation
 from phenylphenylenediamine side-group to main-chain polyphenyls and
 polythiophenes)

RN 1633-14-3 HCAPLUS

CN 2,5-Cyclohexadiene-1,4-dione, 2,5-dibromo- (9CI) (CA INDEX NAME)



L92 ANSWER 2 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:558383 HCAPLUS

DN 137:233020

ED Entered STN: 29 Jul 2002

TI Conjugated Polymer Liquid Crystal Solutions: Control of Conformation and Alignment

AU Zhu, Zhengguo; Swager, Timothy M.

CS Department of Chemistry, Massachusetts Institute of Technology, Cambridge,

MA, USA

SO Journal of the American Chemical Society (2002), 124(33), 9670-9671
CODEN: JACSAT; ISSN: 0002-7863

PB American Chemical Society

DT Journal

LA English

CC 35-7 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 36, 73, 75

AB Fluorescent poly(phenylene vinylene)s and poly(phenylene ethynylene)s containing rigid triptycene groups were prepared using Suzuki and Sonogashira protocols. The triptycene groups impart extraordinary solubility to conjugated polymers even in the absence of flexible side chains; addnl. t-Bu groups were introduced, which were found to further enhance solubility. Stable solns. of poly(phenylene vinylene)s and poly(phenylene ethynylene)s in nematic liquid crystal 1-(trans-4-hexylcyclohexyl)-4-isothiocyanatobenzene (6CHBT), $T_m = 12.4^\circ$, $T_{NI} = 42.4^\circ$ were prepared and studied in cells with rubbed internal polyimide surface that impart homogeneous alignment of the nematic liquid crystal. The conjugated polymer backbones align with the director of the nematic liquid crystal, and the polymers can be reoriented by applying an elec. field. The conjugated polymers all displayed lower band gap in the liquid crystal solvent relative to that obtained in standard solvents such as methylene chloride. The liquid crystal solution induces a **chain-extended highly conjugated** structure in the **polymers**, i.e., allows control of conformation and alignment, and results in enhanced charge transport and electroluminescence.

ST phenylene ethynylene conjugated polymer triptycene group prepn soly; polyphenylene polyacetylene triptycene group prepn dissoln liq crystal; hexylcyclohexyl isothiocyanatobenzene nematic liq crystal solvent conjugated polymer; alignment conformation conjugated polymer control soln liq crystal; fluorescence transport conjugated polymer soln liq crystal

IT Coupling reaction
(Sonogashira; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT Molecular orientation
(alignment; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT Polymer chains
(conformation; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT Polymers, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(conjugated; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT Polymerization
(coupling reaction; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT **Polymer chains**
(length, **conjugated** segment; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT Electric field effects
(mol. alignment; preparation of soluble poly(phenylene vinylene)s and

poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT Liquid crystals
(nematic; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT Band gap
(optical; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT Polyphenyls
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polyacetylene-; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT Polyacetylenes, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polyphenyl-; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT Absorption spectra
Fluorescence
Luminescence, electroluminescence
Optical absorption
Solubility
Suzuki coupling reaction
(preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT Poly(arylenealkenylenes)
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT 13400-13-0, Cesium fluoride (CsF) 14221-01-3, Tetrakis(triphenylphosphine)palladium
RL: CAT (Catalyst use); USES (Uses)
(coupling polymerization catalyst; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT 603-35-0, Triphenylphosphine, uses
RL: CAT (Catalyst use); USES (Uses)
(ethynylation catalyst ligand; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT 32005-36-0, Bis(dibenzylideneacetone)palladium
RL: CAT (Catalyst use); USES (Uses)
(ethynylation catalyst; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

IT 7681-65-4, Cuprous iodide
RL: CAT (Catalyst use); USES (Uses)
(ethynylation co-catalyst; preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and

alignment in liquid crystal solution and under elec. field)
IT 25015-63-8, 4,4,5,5-Tetramethyl-1,3,2-dioxaborolane
RL: RCT (Reactant); RACT (Reactant or reagent)
(intermediate and monomer; preparation of soluble poly(phenylene vinylene)s
and
poly(phenylene ethynylene)s conjugated polymers and conformation and
alignment in liquid crystal solution and under elec. field)
IT 402489-36-5P, 6,14-Di-tert-butyl-1,4-diethynyl-[1',2']benzenoanthracene
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(intermediate and monomer; preparation of soluble poly(phenylene vinylene)s
and
poly(phenylene ethynylene)s conjugated polymers and conformation and
alignment in liquid crystal solution and under elec. field)
IT 402489-33-2P, 6,14-Di-tert-butyl-9,10-dihydro-9,10[1',2']benzenoanthracene-
1,4-diol 402489-34-3P, 6,14-Di-tert-butyl-1,4-nonafluorobutanesulfonyl-
[1',2']benzenoanthracene 402489-35-4P, 6,14-Di-tert-butyl-1,4-bis(3-
hydroxy-3-methyl-but-1-ynyl)-[1',2']benzenoanthracene
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(intermediate; preparation of soluble poly(phenylene vinylene)s and
poly(phenylene ethynylene)s conjugated polymers and conformation and
alignment in liquid crystal solution and under elec. field)
IT 536-74-3DP, Phenylacetylene, reaction products with poly(phenylene
vinylene)-poly(phenylene ethynylene)s
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(low mol. weight; preparation of soluble poly(phenylene vinylene)s and
poly(phenylene ethynylene)s conjugated polymers and conformation and
alignment in liquid crystal solution and under elec. field)
IT 402489-37-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(monomer; preparation of soluble poly(phenylene vinylene)s and
poly(phenylene
ethynylene)s conjugated polymers and conformation and alignment in liquid
crystal solution and under elec. field)
IT 92444-14-9, 6CHBT
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)
(nematic liquid crystal solvent; preparation of soluble poly(phenylene
vinylene)s
and poly(phenylene ethynylene)s conjugated polymers and conformation
and alignment in liquid crystal solution and under elec. field)
IT 402489-38-7P 402489-39-8P 402489-44-5P 402727-65-5P 459457-80-8P
459457-81-9P 459457-82-0P 459457-83-1P 459457-84-2DP,
ethynylbenzene-terminated 459457-85-3P 459457-86-4DP,
ethynylbenzene-terminated 459457-87-5P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation of soluble poly(phenylene vinylene)s and poly(phenylene
ethynylene)s conjugated polymers and conformation and alignment in liquid
crystal solution and under elec. field)
IT 106-51-4, 1,4-Benzoquinone, reactions 115-19-5,
2-Methyl-3-butyn-2-ol 375-72-4, Perfluorobutylsulfonyl fluoride
62375-58-0, 2,6-Di-tert-butyl-anthracene
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of soluble poly(phenylene vinylene)s and poly(phenylene
ethynylene)s conjugated polymers and conformation and alignment in liquid
crystal solution and under elec. field)

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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Chapter IX 1998, V2b, P781 HCAPLUS

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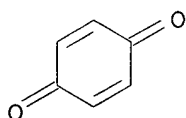
IT 106-51-4, 1,4-Benzoquinone, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of soluble poly(phenylene vinylene)s and poly(phenylene ethynylene)s conjugated polymers and conformation and alignment in liquid crystal solution and under elec. field)

RN 106-51-4 HCAPLUS

CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



L92 ANSWER 3 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2000:854856 HCAPLUS

DN 134:148109

ED Entered STN: 07 Dec 2000

TI Effect of acceptors on energetic disorder in poly(methylphenylsilane) films

AU Zaika, V. M.; Kadashchuk, A. K.; Ostapenko, N. L.; Skirshevs'kii, Yu. A.; Nespurek, S.

CS Inst. Phys., Natl. Acad. Sci., Kiev, 03028, Ukraine

SO Ukrain'skii Fizichnii Zhurnal (2000), 45(10), 1246-1249

CODEN: UFZHFY; ISSN: 0372-400X

PB Natsional'na Akademiya Nauk Ukraini, Viddilennya Fiziki i Astronomii

DT Journal

LA Ukrainian

CC 36-5 (Physical Properties of Synthetic High Polymers)

AB Effect of acceptor dopants on the energetic disorder of charge carrier localized states in poly(methylphenylsilane) films is studied by the low-temperature thermally stimulated luminescence and photoluminescence. Decreasing the energetic disorder parameter with increasing the acceptor dopants' concentration is explained by formation of charge-transfer complexes between acceptor mols. and the predominantly longest segments of σ -conjugated polymer chains.

ST polymethylphenylsilane chloroanil trinitrofluorenone electron acceptor energy disorder fluorescence

IT Electron acceptors

Fluorescence

(effect of electron acceptors on energetic disorder in poly(methylphenylsilane) films)

IT Polysilanes

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)

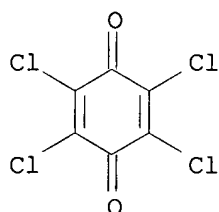
(effect of electron acceptors on energetic disorder in poly(methylphenylsilane) films)

IT 76188-55-1, Poly(methylphenylsilane) 146088-00-8,

Poly(methylphenylsilane)

RL: PEP (Physical, engineering or chemical process); PRP (Properties);

PROC (Process)
 (effect of electron acceptors on energetic disorder in
 poly(methylphenylsilane) films)
 IT 118-75-2, uses 129-79-3
 RL: NUU (Other use, unclassified); USES (Uses)
 (electron acceptor additive; effect of electron acceptors on energetic
 disorder in poly(methylphenylsilane) films)
 IT 118-75-2, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (electron acceptor additive; effect of electron acceptors on energetic
 disorder in poly(methylphenylsilane) films)
 RN 118-75-2 HCAPLUS
 CN 2,5-Cyclohexadiene-1,4-dione, 2,3,5,6-tetrachloro- (9CI) (CA INDEX NAME)



L92 ANSWER 4 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2000:358596 HCAPLUS
 DN 133:90040
 ED Entered STN: 31 May 2000
 TI Linearly extended π -conjugated dithiafulvene polymer formed soluble
 charge-transfer complex with 7,7,8,8-tetracyanoquinodimethane
 AU Naka, Kensuke; Uemura, Takashi; Chujo, Yoshiki
 CS Department of Polymer Chemistry, Graduate School of Engineering, Kyoto
 University, Kyoto, 606-8501, Japan
 SO Polymer Journal (Tokyo) (2000), 32(5), 435-439
 CODEN: POLJB8; ISSN: 0032-3896
 PB Society of Polymer Science, Japan
 DT Journal
 LA English
 CC 36-5 (Physical Properties of Synthetic High Polymers)
 Section cross-reference(s): 76
 AB A soluble charge-transfer (CT) complex of π -conjugated donor polymer with
 7,7,8,8-tetracyanoquinodimethane (TCNQ) was formed when TCNQ was added to
 a DMSO solution of π -conjugated poly(dithiafulvene) (PDTF). In DMSO, PDTF
 reacted with TCNQ to produce a dark green solution After the precipitated
 TCNQ was
 filtered, the filtrate was evaporated to obtain a dark green powder. The
 resulting CT complex was soluble in acetonitrile, DMSO, N,N-dimethylformamide
 (DMF), acetone, and MeOH, and partially soluble in THF. The UV-Vis
 absorption spectra suggest formation of the CT complex containing about 1: 1
 ratio of dithiafulvene unit to TCNQ. The UV-Vis absorption and FTIR data
 indicate that the anion radical of TCNQ was initially formed by
 charge-transfer reaction when TCNQ was added to the solution of PDTF, and the
 remaining TCNQ interacted with PDTF as a partially charge-transferred
 form. In the ^1H NMR spectra, the broad peak attributed to the benzyldiene
 proton of PDTF was shifted to a lower magnetic field proportional to the
 TCNQ feed ratio against the dithiafulvene unit of PDTF. The CT complex
 has a conductivity of $2 + 10^{-4} \text{ S cm}^{-1}$, three orders of magnitude greater

than that of uncomplexed polymer.

ST polydithiafulvene conjugated polymer charge transfer complex TCNQ;
tetracyanoquinodimethane charge transfer complex polydithiafulvene cond;
polyacetylene polydithiafulvene prepn TCNQ complex elec cond

IT Polymers, properties
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(conjugated; preparation and absorption spectra of highly conductive linear
dithiafulvene polymer charge-transfer complexes with TCNQ)

IT Redox reaction
(electrochem.; preparation and absorption spectra of highly conductive
linear dithiafulvene polymer charge-transfer complexes with TCNQ)

IT **Polymer chains**
(extended **conjugated**; preparation and absorption spectra of highly
conductive linear dithiafulvene polymer charge-transfer complexes with
TCNQ)

IT Polyacetylenes, properties
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polydithiafulvene; preparation and absorption spectra of highly conductive
linear dithiafulvene polymer charge-transfer complexes with TCNQ)

IT Absorption spectra
Charge transfer interaction
(preparation and absorption spectra of highly conductive linear
dithiafulvene polymer charge-transfer complexes with TCNQ)

IT Charge transfer complexes
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and absorption spectra of highly conductive linear
dithiafulvene polymer charge-transfer complexes with TCNQ)

IT Electric conductivity
(semicond.; preparation and absorption spectra of highly conductive linear
dithiafulvene polymer charge-transfer complexes with TCNQ)

IT 15995-11-6, 2-Benzylidene-4-phenyl-1,3-dithiole
RL: PRP (Properties)
(model compound; preparation and absorption spectra of highly conductive
linear dithiafulvene polymer charge-transfer complexes with TCNQ)

IT **1518-16-7, TCNQ**
RL: PEP (Physical, engineering or chemical process); PRP (Properties);
PROC (Process)
(preparation and absorption spectra of highly conductive linear
dithiafulvene polymer charge-transfer complexes with TCNQ)

IT 108414-62-6P, Sulfur, polymer with 1,4-diethynylbenzene 215318-18-6P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and absorption spectra of highly conductive linear
dithiafulvene polymer charge-transfer complexes with TCNQ)

RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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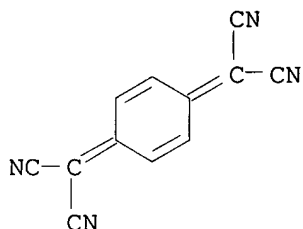
IT 1518-16-7, TCNQ

RL: PEP (Physical, engineering or chemical process); PRP (Properties);
PROC (Process)

(preparation and absorption spectra of highly conductive linear
dithiafulvene polymer charge-transfer complexes with TCNQ)

RN 1518-16-7 HCAPLUS

CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA
INDEX NAME)



L92 ANSWER 5 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1999:807883 HCAPLUS

DN 132:93749

ED Entered STN: 23 Dec 1999

TI Syntheses and properties of π -conjugated polymers containing
tetrathiafulvalene in the polymer backbone

AU Tamura, Hiroshi; Watanabe, Tsuchitsugu; Imanishi, Kazukiyo; Sawada, Makoto

CS Faculty of Engineering and High Technology Research Center, Kansai
University, Suita, 564-8680, Japan

SO Synthetic Metals (1999), 107(1), 19-25

CODEN: SYMEDZ; ISSN: 0379-6779

PB Elsevier Science S.A.

DT Journal

LA English

CC 35-7 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 36, 73, 76

AB Tetrathiafulvalene (TTF)-containing π -conjugated polymers were prepared from
dibrominated TTF derivs. and diboronic acid derivs. using the Suzuki
coupling reaction. The polymers have mol. weight of 12,900-36,700 and
excellent solubility in conventional organic solvents, attributed to the alkoxy
chain. The electrochromism of the polymers was studied using spin-coated
films on ITO glass plate; the color of the film changed reversibly from
yellow to red purple depending on the applied potential. The
electrochromic response was rapid and reproducible over a thousand redox
cycles. Optoelectrochem. measurements of spin-coated polymer films
revealed that the color change was associated with the electronic state of
the TTF moiety, and the charge-transfer band to intermol. interactions

- between TTF moieties in different polymer chains.
- ST tetrathiafulvalene diboronic acid deriv copolymer Suzuki coupling;
conjugated polymer tetrathiafulvalene electrochromism charge transfer;
conducting polymer charge transfer tetrathiafulvalene main chain
- IT Polymerization
(Suzuki coupling; preparation and electrochromism and charge transfer of
electroactive π - **conjugated polymers** with
tetrathiafulvalene main **chain**)
- IT Redox reaction
(electrochem.; preparation and electrochromism and charge transfer of
electroactive π - **conjugated polymers** with
tetrathiafulvalene main **chain**)
- IT Absorption spectra
(optoelectrochem.; preparation and electrochromism and charge transfer of
electroactive π - **conjugated polymers** with
tetrathiafulvalene main **chain**)
- IT Polymers, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polytetrathiafulvalenes, polyphenylene; preparation and electrochromism and
charge transfer of electroactive π - **conjugated**
polymers with tetrathiafulvalene main **chain**)
- IT Cyclization
Electric conductivity
Electrochromic materials
Electrochromism
Electron transfer
(preparation and electrochromism and charge transfer of electroactive π -
conjugated polymers with tetrathiafulvalene main
chain)
- IT Polyphenyls
RL: MOA (Modifier or additive use); USES (Uses)
(tetrathiafulvalene group containing; preparation and electrochromism and
charge
transfer of electroactive π - **conjugated polymers**
with tetrathiafulvalene main **chain**)
- IT 14221-01-3, Tetrakis(triphenylphosphine)palladium
RL: CAT (Catalyst use); USES (Uses)
(coupling polymerization catalyst; preparation and electrochromism and
charge
transfer of electroactive π - **conjugated polymers**
with tetrathiafulvalene main **chain**)
- IT 122-52-1, Triethyl phosphite
RL: NUU (Other use, unclassified); USES (Uses)
(coupling reagent; preparation and electrochromism and charge transfer of
electroactive π - **conjugated polymers** with
tetrathiafulvalene main **chain**)
- IT 7601-90-3, Perchloric acid, uses
RL: NUU (Other use, unclassified); USES (Uses)
(cyclization reagent; preparation and electrochromism and charge transfer of
electroactive π - **conjugated polymers** with
tetrathiafulvalene main **chain**)
- IT 7553-56-2, Iodine, uses
RL: MOA (Modifier or additive use); USES (Uses)
(dopant; preparation and electrochromism and charge transfer of
electroactive π - **conjugated polymers** with
tetrathiafulvalene main **chain**)
- IT 1861-49-0P, O-Isopropyl-S-(p-bromophenacyl)dithiocarbonate 42574-14-1P,
4-(p-Bromophenyl)-1,3-dithiol-2-one 128424-36-2P, 2,5-Dibromo-1,4-
dihexyloxybenzene 137436-30-7P, 2,5-Dibromo-1,4-didodecyloxybenzene

171089-85-3P, 1,4-Dihexyloxy-2,5-phenyldiboronic acid 211692-94-3P,
1,4-Didodecyloxy-2,5-phenyldiboronic acid
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(intermediate; preparation and electrochromism and charge transfer of
electroactive π - **conjugated polymers** with
tetrathiafulvalene main **chain**)

IT **61485-52-7P**, Bis(p-bromophenyl)tetrathiafulvalene 241802-45-9P,
1,4-Dihexyloxy-2,5-phenyldiboronic acid 1,3-propanediol diester
254907-55-6P, 1,4-Didodecyloxy-2,5-phenyldiboronic acid 1,3-propanediol
diester
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(monomer; preparation and electrochromism and charge transfer of
electroactive π - **conjugated polymers** with
tetrathiafulvalene main **chain**)

IT 254907-58-9P, Bis(p-bromophenyl)tetrathiafulvalene-1,4-dihexyloxy-2,5-
phenyldiboronic acid 1,3-propanediol diester copolymer 254907-61-4P,
Bis(p-bromophenyl)tetrathiafulvalene-1,4-dihexyloxy-2,5-phenyldiboronic
acid 1,3-propanediol diester copolymer, SRU 254907-65-8P,
Bis(p-bromophenyl)tetrathiafulvalene-1,4-didodecyloxy-2,5-phenyldiboronic
acid 1,3-propanediol diester copolymer 254907-68-1P,
Bis(p-bromophenyl)tetrathiafulvalene-1,4-didodecyloxy-2,5-phenyldiboronic
acid 1,3-propanediol diester copolymer, SRU
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and electrochromism and charge transfer of electroactive π -
conjugated polymers with tetrathiafulvalene main
chain)

IT 99-73-0, p-Bromophenacyl bromide 121-43-7, Trimethoxyborane 140-92-1,
Potassium isopropylxanthate 504-63-2, 1,3-Propanediol 3230-09-9,
1,4-Didodecyloxybenzene 7726-95-6, Bromine, reactions 67399-93-3,
1,4-Dihexyloxybenzene
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation and electrochromism and charge transfer of electroactive π -
conjugated polymers with tetrathiafulvalene main
chain)

RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

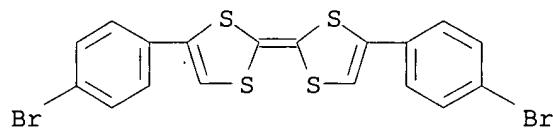
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IT **61485-52-7P**, Bis(p-bromophenyl)tetrathiafulvalene
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(monomer; preparation and electrochromism and charge transfer of

electroactive π - conjugated polymers with
tetrathiafulvalene main chain)

RN 61485-52-7 HCAPLUS

CN 1,3-Dithiole, 4-(4-bromophenyl)-2-[4-(4-bromophenyl)-1,3-dithiol-2-ylidene]- (9CI) (CA INDEX NAME)



L92 ANSWER 6 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1998:732359 HCAPLUS

DN 130:82108

ED Entered STN: 19 Nov 1998

TI Polydiacetylenes with Long Wavelength Absorption

AU Foley, James L.; Li, Lian; Sandman, Daniel J.

CS Center for Advanced Materials Department of Chemistry, University of Massachusetts Lowell, Lowell, MA, 01854-2881, USA

SO Chemistry of Materials (1998), 10(12), 3984-3990

CODEN: CMATEX; ISSN: 0897-4756

PB American Chemical Society

DT Journal

LA English

CC 36-5 (Physical Properties of Synthetic High Polymers)

Section cross-reference(s): 35, 73

AB A series of 1,6-disubstituted-2,4-hexadiynes, where the substituents are para-substituted benzene rings that have either a dicyanovinyl or tricyanovinyl group as one substituent and have either an oxygen or N-alkyl group connecting to the hexadiyne chain, was designed to lead to polydiacetylenes (PDAs) with long wavelength absorption, and these PDAs were synthesized. The new compds., in contrast to other diacetylene monomers, are relatively insensitive to UV light and ionizing radiation under ambient temperature and require heating above 100° to bring about preparatively useful conversion to polymer. The new PDAs have the usual en-yne backbone structure as shown by Raman spectroscopy. Three of the new PDAs exhibit maxima in diffuse reflectance at wavelengths as long as or longer than the PDA of 1,6-di-N-carbazolyl-2,4-hexadiyne.

ST polydiacetylene cyanovinylbenzene substituted hexadiyne prepn UV

sensitivity; reflectance optical absorption polydiacetylene

cyanovinylbenzene substituent; **conjugated polymer**

cyanovinylbenzene hexadiyne **chain** structure

IT Polymers, properties

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(conjugated, cyanovinylbenzene-substituted polydiacetylenes; preparation of cyanovinylbenzene chromophore-substituted hexadiyne monomers and

polymerization to obtain polydiacetylenes with long wavelength absorption)

IT **Polymer chains**

(**conjugation** length; preparation of cyanovinylbenzene

chromophore-substituted hexadiyne monomers and polymerization to obtain

polydiacetylenes with long wavelength absorption)

IT Optical reflection

(diffuse; preparation of cyanovinylbenzene chromophore-substituted hexadiyne monomers and polymerization to obtain polydiacetylenes with long wavelength absorption)

- IT Polydiacetylenes
 - RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (hexadiyne-containing; preparation of cyanovinylbenzene chromophore-substituted hexadiyne monomers and polymerization to obtain polydiacetylenes with long wavelength absorption)
- IT Coupling reaction
 - (oxidative; preparation of cyanovinylbenzene chromophore-substituted hexadiyne monomers and polymerization to obtain polydiacetylenes with long wavelength absorption)
- IT Electronic excitation
 - Formylation
 - Knoevenagel reaction
 - Optical absorption
 - (preparation of cyanovinylbenzene chromophore-substituted hexadiyne monomers and polymerization to obtain polydiacetylenes with long wavelength absorption)
- IT Polymerization
 - (solid-state, thermally induced; preparation of cyanovinylbenzene chromophore-substituted hexadiyne monomers and polymerization to obtain polydiacetylenes with long wavelength absorption)
- IT Polymerization
 - (thermally induced; preparation of cyanovinylbenzene chromophore-substituted hexadiyne monomers and polymerization to obtain polydiacetylenes with long wavelength absorption)
- IT 218625-27-5P, 1,6-Bis(N-[p-formylphenyl]-N-methylamino)-2,4-hexadiyne
 - RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 - (monomer precursor; preparation of cyanovinylbenzene chromophore-substituted hexadiyne monomers and polymerization to obtain polydiacetylenes with long wavelength absorption)
- IT 208054-22-2P, 1,6-Bis(N-methyl-N-[p-tricyanovinylphenyl]amino)-2,4-hexadiyne 208054-23-3P 208054-25-5P, 1,6-Bis(p-oxybenzylidenemalononitrile)-2,4-hexadiyne 213555-58-9P, 1,6-Bis(N-methyl-N-[p-dicyanovinylphenyl]amino)-2,4-hexadiyne
 - RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 - (monomer; preparation of cyanovinylbenzene chromophore-substituted hexadiyne monomers and polymerization to obtain polydiacetylenes with long wavelength absorption)
- IT 110-91-8, Morpholine, uses
 - RL: CAT (Catalyst use); USES (Uses)
 - (preparation of cyanovinylbenzene chromophore-substituted hexadiyne monomers and polymerization to obtain polydiacetylenes with long wavelength absorption)
- IT 208054-26-6P, 1,6-Bis(N-methyl-N-[p-tricyanovinylphenyl]amino)-2,4-hexadiyne homopolymer 208054-27-7P, 1,6-Bis(N-ethyl-N-[p-tricyanovinylphenyl]amino)-2,4-hexadiyne homopolymer 208054-29-9P, 1,6-Bis(p-oxybenzylidenemalononitrile)-2,4-hexadiyne homopolymer
 - RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 - (preparation of cyanovinylbenzene chromophore-substituted hexadiyne monomers and polymerization to obtain polydiacetylenes with long wavelength absorption)
- IT 109-77-3, Malononitrile 110-18-9 123-08-0, p-Hydroxybenzaldehyde 670-54-2, Tetracyanoethylene, reactions 4282-82-0, N-Methyl-N-propargylaniline 7758-89-6, Copper chloride (CuCl) 10025-87-3, Phosphorus chloride oxide (PCl3O) 18158-72-0, N-Ethyl-N-propargylaniline 75354-81-3, 1,6-Bis(p-toluenesulfonate)-2,4-hexadiyne 75464-41-4, 1,6-Bis(N-methyl-N-phenylamino)-2,4-hexadiyne

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of cyanovinylbenzene chromophore-substituted hexadiyne monomers and polymerization to obtain polydiacetylenes with long wavelength absorption)

IT 18158-85-5P, 1,6-Bis(N-ethyl-N-phenylamino)-2,4-hexadiyne 210365-59-6P,
1,6-Bis(p-oxybenzaldehyde)-2,4-hexadiyne 218625-28-6P,
4-(N-Methyl-N-propargylamino)benzaldehyde 218625-29-7P,
p-Dicyanovinyl-N-methyl-N-propargylaniline 218625-30-0P,
p-Tricyanovinyl-N-methyl-N-propargylaniline

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

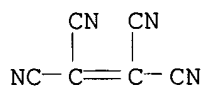
(preparation of cyanovinylbenzene chromophore-substituted hexadiyne monomers and polymerization to obtain polydiacetylenes with long wavelength absorption)

RE.CNT 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD

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 IT 670-54-2, Tetracyanoethylene, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of cyanovinylbenzene chromophore-substituted hexadiyne monomers
 and polymerization to obtain polydiacetylenes with long wavelength
 absorption)
 RN 670-54-2 HCAPLUS
 CN Ethenetetracarbonitrile (6CI, 8CI, 9CI) (CA INDEX NAME)



L92 ANSWER 7 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1998:628179 HCAPLUS
 DN 129:331126
 ED Entered STN: 06 Oct 1998
 TI Synthesis of π -Conjugated Poly(dithiafulvene) by Cycloaddition
 Polymerization of Aldothioketene with Its Alkynethiol Tautomer
 AU Naka, Kensuke; Uemura, Takashi; Chujo, Yoshiki
 CS Department of Polymer Chemistry Graduate School of Engineering, Kyoto
 University, Yoshida Sakyo-ku Kyoto, 606-8501, Japan
 SO Macromolecules (1998), 31(21), 7570-7571
 CODEN: MAMOBX; ISSN: 0024-9297
 PB American Chemical Society
 DT Journal
 LA English
 CC 35-7 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 36
 AB A π -conjugated polymer having electron-donating 1,3-dithiafulvene units
 in the main chain was prepared by cycloaddn. polymerization of the
 aldothioketene
 from 1,4-diethynylbenzene with its alkynethiol tautomer.
 Poly(1,3-dithiafulvene)s were also prepared in good yield using various
 aromatic diynes and. The UV-vis spectra indicates that the π - π^*
 transition of some of the polymers is observed at 398 nm, largely
 bathochromic-shifted in comparison with the model compound
 2-benzylidene-4-phenyl-1,3-dithiole, ascribed to effective expansion of
 the π -conjugation system in the polymers. In DMSO, polymers reacted
 with TCNQ to produce a dark green CT [charge transfer complex], with a
 major maximum in the visible region of the spectrum at 840 nm and minor bands
 at 744, 760, 680, and 665 nm, which are responsible for the anion radical
 of TCNQ. The CT complex of this π -conjugated polymer having
 1,3-dithiafulvene unit is a new class of π -conjugated CT complexes.
 ST dithiafulvene aldothioketene alkynethiol conjugated polymer prepn; charge
 transfer complex TCNQ polythiafulvene
 IT Polymers, preparation
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (conjugated, extended π -; preparation of π -conjugated
 poly(dithiafulvene)s via cycloaddn. of aldothioketene with alkynethiols

- and formation of charge transfer complexes with TCNQ)
- IT Polymerization
(cyclopolymn.; preparation of π -conjugated poly(dithiafulvene)s via cycloaddn. of aldothioketene with alkynethiols and formation of charge transfer complexes with TCNQ)
- IT **Polymer chains**
(length; preparation of π -conjugated poly(dithiafulvene)s via cycloaddn. of aldothioketene with alkynethiols and formation of charge transfer complexes with TCNQ)
- IT **Polymer chains**
(orientation; preparation of π -conjugated poly(dithiafulvene)s via cycloaddn. of aldothioketene with alkynethiols and formation of charge transfer complexes with TCNQ)
- IT Polyacetylenes, preparation
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(polydithiafulvenes; preparation of π -conjugated poly(dithiafulvene)s via cycloaddn. of aldothioketene with alkynethiols and formation of charge transfer complexes with TCNQ)
- IT Bathochromic effect
Cycloaddition reaction
Electron transfer
Optical absorption
(preparation of π -conjugated poly(dithiafulvene)s via cycloaddn. of aldothioketene with alkynethiols and formation of charge transfer complexes with TCNQ)
- IT Charge transfer complexes
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of π -conjugated poly(dithiafulvene)s via cycloaddn. of aldothioketene with alkynethiols and formation of charge transfer complexes with TCNQ)
- IT 15995-11-6P, 2-Benzylidene-4-phenyl-1,3-dithiole 24815-46-1P, Phenylthioacetopiperidide
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(model compound; preparation of π -conjugated poly(dithiafulvene)s via cycloaddn. of aldothioketene with alkynethiols and formation of charge transfer complexes with TCNQ)
- IT 108414-62-6P 215318-18-6P 215318-19-7P 215318-20-0P 215318-21-1P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of π -conjugated poly(dithiafulvene)s via cycloaddn. of aldothioketene with alkynethiols and formation of charge transfer complexes with TCNQ)
- IT 109-72-8, n-Butyllithium, reactions 110-89-4D, Piperidine, reaction products with poly(dithiafulvenes), reactions 935-14-8 **1518-16-7** 7704-34-9, Sulfur, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of π -conjugated poly(dithiafulvene)s via cycloaddn. of aldothioketene with alkynethiols and formation of charge transfer complexes with TCNQ)

RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD

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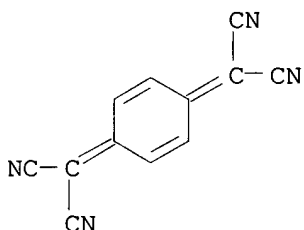
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IT 1518-16-7

RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of π -conjugated poly(dithiafulvene)s via cycloaddn. of
 aldothioketene with alkynethiols and formation of charge transfer
 complexes with TCNQ)

RN 1518-16-7 HCAPLUS

CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA
 INDEX NAME)



L92 ANSWER 8 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1998:532250 HCAPLUS

DN 129:261127

ED Entered STN: 24 Aug 1998

TI Photoluminescence properties of dialkoxy poly(1,4-naphthalenevinylene)
 (PNV) homopolymers and copolymers synthesized by ROMP-aromatization route

AU Elder, Delwin L.; Wagaman, Michael W.; Grubbs, Robert H.

CS Division of Chemistry and Chemical Engineering, Arnold and Mabel Beckman
 Laboratory of Chemical Synthesis, Pasadena, CA, 91125, USA

SO Polymer Preprints (American Chemical Society, Division of Polymer
 Chemistry) (1998), 39(2), 733-734
 CODEN: ACPPAY; ISSN: 0032-3934

PB American Chemical Society, Division of Polymer Chemistry

DT Journal

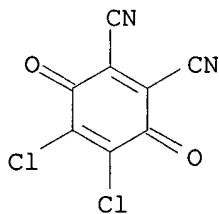
LA English

CC 36-5 (Physical Properties of Synthetic High Polymers)
 Section cross-reference(s): 35, 74

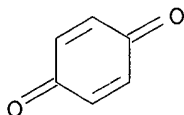
AB Conjugated polymers poly(1,4-naphthalenevinylene)s (PNV)s di-substituted
 with electron-donating alkoxy substituents were synthesized by
 ring-opening metathesis polymerization (ROMP) of barrelene and benzobarrelene
 monomers followed by aromatization with DDQ. The polymers are soluble in
 common organic solvents and are strongly luminescent, making them good
 candidates for the emissive component of organic light emitting diodes
 (OLEDs). The wavelength of photoemission of the benzobarrelene analog
 (534 nm, green) is blue shifted relative to unsubstituted PNV, contrary to
 theor. predictions and previous expts. with dialkoxy substituted

- poly-(p-phenylenevinylenes) (PPVs). This is believed to be the result of the bulky alkoxy side **chains** causing twists in the **polymer** backbone, thus reducing the average **conjugation** length.
- ST polynaphthalenevinylene prepn barrelene monomer ROMP aromatization; photoluminescence polynaphthalenevinylene alkoxy side chain conjugation; **conjugated polymer** benzobarrelene luminescence **chain** length
- IT Poly(arylenealkenylenes)
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (benzobarrelene-containing, alkoxy-substituted; preparation and photoluminescence of dialkoxy-substituted naphthalenevinylene homopolymers and copolymers obtained via by ROMP-aromatization route)
- IT Polymers, properties
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (conjugated, benzobarrelene-containing, alkoxy-substituted; preparation and photoluminescence of dialkoxy-substituted naphthalenevinylene homopolymers and copolymers obtained via by ROMP-aromatization route)
- IT **Polymer chains**
 (length, **conjugated** segment length; preparation and photoluminescence of dialkoxy-substituted naphthalenevinylene homopolymers and copolymers obtained via by ROMP-aromatization route)
- IT Polymerization
 (metathetic, ring-opening; preparation and photoluminescence of dialkoxy-substituted naphthalenevinylene homopolymers and copolymers obtained via by ROMP-aromatization route)
- IT Aromatization
 Luminescence
 (preparation and photoluminescence of dialkoxy-substituted naphthalenevinylene homopolymers and copolymers obtained via by ROMP-aromatization route)
- IT Polymer chains
 (side, alkoxy; preparation and photoluminescence of dialkoxy-substituted naphthalenevinylene homopolymers and copolymers obtained via by ROMP-aromatization route)
- IT 213664-38-1P 213664-39-2P 213664-40-5P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (monomer; preparation and photoluminescence of dialkoxy-substituted naphthalenevinylene homopolymers and copolymers obtained via by ROMP-aromatization route)
- IT 135505-85-0
 RL: CAT (Catalyst use); USES (Uses)
 (preparation and photoluminescence of dialkoxy-substituted naphthalenevinylene homopolymers and copolymers obtained via by ROMP-aromatization route)
- IT 213664-41-6DP, aromatized 213664-42-7DP, aromatized 213664-43-8DP, aromatized 213664-44-9DP, aromatized 213664-45-0DP, aromatized 213664-46-1DP, aromatized 213664-47-2DP, aromatized
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (preparation and photoluminescence of dialkoxy-substituted naphthalenevinylene homopolymers and copolymers obtained via by ROMP-aromatization route)
- IT 75-03-6, Ethyl iodide **84-58-2**, DDQ **106-51-4**, 2,5-Cyclohexadiene-1,4-dione, reactions 111-83-1, Octyl bromide 865-47-4 1653-16-3 153656-86-1
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation and photoluminescence of dialkoxy-substituted naphthalenevinylene homopolymers and copolymers obtained via by

ROMP-aromatization route)
 IT 213664-37-0P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation and photoluminescence of dialkoxy-substituted
 naphthalenevinylene homopolymers and copolymers obtained via by
 ROMP-aromatization route)
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 IT 84-58-2, DDQ 106-51-4, 2,5-Cyclohexadiene-1,4-dione,
 reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation and photoluminescence of dialkoxy-substituted
 naphthalenevinylene homopolymers and copolymers obtained via by
 ROMP-aromatization route)
 RN 84-58-2 HCAPLUS
 CN 1,4-Cyclohexadiene-1,2-dicarbonitrile, 4,5-dichloro-3,6-dioxo- (6CI, 8CI,
 9CI) (CA INDEX NAME)



RN 106-51-4 HCAPLUS
 CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



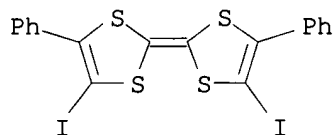
L92 ANSWER 9 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1997:681473 HCAPLUS

DN 127:332114
ED Entered STN: 27 Oct 1997
TI New π -conjugated polymers containing tetrathiafulvalene as the monomeric unit
AU Yamamoto, Takakazu; Shimizu, Takahisa
CS Research Laboratory of Resources Utilization, Tokyo Institute of Technology, Yokohama, 226, Japan
SO Journal of Materials Chemistry (1997), 7(10), 1967-1968
CODEN: JMACEP; ISSN: 0959-9428
PB Royal Society of Chemistry
DT Journal
LA English
CC 37-3 (Plastics Manufacture and Processing)
Section cross-reference(s): 35, 72
AB Four kinds of poly(arylene)- and poly(aryleneethynylene)-type **polymers** containing TTF units in the π - **conjugated** main **chain**, which are susceptible to chemical and electrochem. oxidation, have been prepared by organometallic polycondensation.
ST conjugated polymer contg tetrathiafulvalene prepn; polyaryleneethynylene prepn electrochem oxidn
IT Polymers, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (conjugated; preparation and electrochem. activity of π -conjugated polymers containing tetrathiafulvalene as monomeric unit)
IT Electric current-potential relationship
Polymerization
Polymerization catalysts (preparation and electrochem. activity of π -conjugated polymers containing tetrathiafulvalene as monomeric unit)
IT Poly(arylenealkenylenes)
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (preparation and electrochem. activity of π -conjugated polymers containing tetrathiafulvalene as monomeric unit)
IT 355-43-1, Perfluorohexyl iodide
RL: RCT (Reactant); RACT (Reactant or reagent) (in preparation of monomers for π -conjugated polymers containing tetrathiafulvalene unit)
IT 1295-35-8, Bis(cycloocta-1,5-diene)nickel 14221-01-3, Tetrakis(triphenylphosphine)palladium
RL: CAT (Catalyst use); USES (Uses) (preparation and electrochem. activity of π -conjugated polymers containing tetrathiafulvalene as monomeric unit)
IT **197842-34-5P** 197842-41-4P 197842-44-7P 197842-47-0P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (preparation and electrochem. activity of π -conjugated polymers containing tetrathiafulvalene as monomeric unit)
IT **197842-33-4P 197842-43-6P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (preparation and polymerization of monomers for π -conjugated polymers containing tetrathiafulvalene unit)
IT **197842-34-5P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (preparation and electrochem. activity of π -conjugated polymers containing tetrathiafulvalene as monomeric unit)
RN 197842-34-5 HCAPLUS
CN 1,3-Dithiole, 4-iodo-2-(4-iodo-5-phenyl-1,3-dithiol-2-ylidene)-5-phenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 197842-33-4

CMF C18 H10 I2 S4



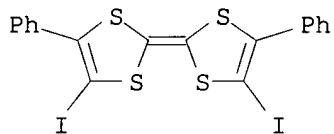
IT 197842-33-4P 197842-43-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and polymerization of monomers for π -conjugated polymers containing tetrathiafulvalene unit)

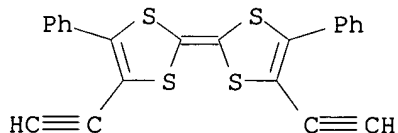
RN 197842-33-4 HCAPLUS

CN 1,3-Dithiole, 4-iodo-2-(4-iodo-5-phenyl-1,3-dithiol-2-ylidene)-5-phenyl- (9CI) (CA INDEX NAME)



RN 197842-43-6 HCAPLUS

CN 1,3-Dithiole, 4-ethynyl-2-(4-ethynyl-5-phenyl-1,3-dithiol-2-ylidene)-5-phenyl- (9CI) (CA INDEX NAME)



L92 ANSWER 10 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1997:88716 HCAPLUS

DN 126:185710

ED Entered STN: 07 Feb 1997

TI A Novel Synthetic Metal Catalytic System

AU Higuchi, Masayoshi; Ikeda, Isao; Hirao, Toshikazu

CS Department of Applied Chemistry Faculty of Engineering, Osaka University, Suita, 565, Japan

SO Journal of Organic Chemistry (1997), 62(4), 1072-1078

CODEN: JOCEAH; ISSN: 0022-3263

PB American Chemical Society

DT Journal

LA English

CC 22-7 (Physical Organic Chemistry)

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

Section cross-reference(s): 34, 35, 36, 67, 72

OS CASREACT 126:185710

AB π -Conjugate polymers, polyanilines and polypyrroles, serve as catalysts in dehydrogenative oxidation reactions of benzylamines, 2-phenylglycine, and 2,6-di-tert-butylphenol under oxygen. The catalytic activity was controlled by protonic acid doping. The reversible redox of the polyaniline catalyst under oxygen was supported by UV-visible spectroscopy. Polyaniline and transition metal such as copper(II) chloride or iron(III) chloride formed a complex, which was effective in the dehydrogenative oxidation of cinnamyl alc. or mandelic acid. In the complex system, transition metals are considered to electronically interact through a **π -conjugate polymer chain**. Protonic acid doping and transition metal doping play an important role in reversible redox processes of polyanilines.

ST synthetic metal catalytic system; oxidative dehydrogenation catalytic

IT Transamination
Transamination
(catalysts; synthetic metal catalytic systems)

IT Redox reaction
(electrochem.; synthetic metal catalytic systems)

IT Coupling reaction
Coupling reaction catalysts
Dehydrogenation
Dehydrogenation catalysts
(oxidative; synthetic metal catalytic systems)

IT Cyclic voltammetry
Dehydrogenation
Dehydrogenation catalysts
Oxidation
Oxidation, electrochemical
Oxidation catalysts
Polymer-supported reagents
Protonation
Redox reaction
Reduction, electrochemical
Solvent effect
Transamination
UV and visible spectra
(synthetic metal catalytic systems)

IT Transition metal compounds
RL: CAT (Catalyst use); USES (Uses)
(synthetic metal catalytic systems)

IT Polyamines
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(synthetic metal catalytic systems)

IT Aldehydes, preparation
Imines
Schiff bases
RL: SPN (Synthetic preparation); PREP (Preparation)
(synthetic metal catalytic systems)

IT Amination catalysts
Amination catalysts
(transamination; synthetic metal catalytic systems)

IT Polymers, reactions
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(π -conjugated; synthetic metal catalytic systems)

IT 100-51-6, Benzyl alcohol, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
 (attempted oxidation; synthetic metal catalytic systems)

IT 7447-39-4DP, Cupric chloride, polymer complexed 15158-11-9DP, Copper, ion(2+), polymer complexed, reactions 25233-30-1P
 RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PRP (Properties); RCT (Reactant); PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES (Uses)
 (synthetic metal catalytic systems)

IT 1801-77-0DP, Ethoxyvanadyl dichloride, polymer complexed 7727-54-0DP, polymer complexed 22537-31-1DP, Vanadium, ion(5+), polymer complexed, reactions 25233-30-1DP, doped 27082-18-4DP, doped 27082-18-4P 30604-81-0DP, doped 30604-81-0P 38465-60-0DP, Copper tetrafluoroborate, polymer complexed 72945-66-5DP, doped 72945-66-5P 97917-08-3DP, doped 97917-08-3P 99742-70-8DP, doped 99742-70-8P 159539-55-6DP, doped 159539-55-6P
 RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES (Uses)
 (synthetic metal catalytic systems)

IT 7447-39-4, Cupric chloride, reactions 7647-01-0D, Hydrogen chloride, polymer doped by 7705-08-0, Ferric chloride, reactions 7705-08-0D, Ferric chloride, polymer complexed 20074-52-6D, polymer complexed, reactions 27176-87-0D, Dodecylbenzenesulfonic acid, polymer doped by
 RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)
 (synthetic metal catalytic systems)

IT 62-53-3, Aniline, reactions 95-53-4, o-Toluidine, reactions 96-54-8, N-Methylpyrrole 100-61-8, N-Methylaniline, reactions 109-97-7, Pyrrole 111-25-1, Hexyl bromide 554-84-7 1801-77-0, Ethoxyvanadyl dichloride 7727-54-0 38465-60-0, Copper tetrafluoroborate
 RL: CAT (Catalyst use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
 (synthetic metal catalytic systems)

IT 55792-43-3P, 3-(Hexyloxy)aniline 131770-65-5P
 RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
 (synthetic metal catalytic systems)

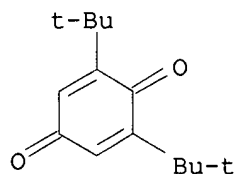
IT 90-64-2, Mandelic acid 91-00-9, Diphenylmethylaniline 100-46-9, Benzylamine, reactions 104-54-1, Cinnamyl alcohol 109-73-9, Butylamine, reactions 128-39-2, 2,6-Di-tert-butylphenol 2835-06-5, 2-Phenylglycine 7782-44-7, Oxygen, reactions
 RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
 (synthetic metal catalytic systems)

IT 100-52-7P, Benzaldehyde, preparation 104-55-2P **719-22-2P** 780-25-6P 1077-18-5P 2455-14-3P 5350-59-4P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (synthetic metal catalytic systems)

IT **719-22-2P**
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (synthetic metal catalytic systems)

RN 719-22-2 HCAPLUS

CN 2,5-Cyclohexadiene-1,4-dione, 2,6-bis(1,1-dimethylethyl)- (9CI) (CA INDEX NAME)



L92 ANSWER 11 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1994:469048 HCAPLUS
 DN 121:69048
 ED Entered STN: 06 Aug 1994
 TI Electroluminescent and electrochromic elements
 IN Yoshimura, Tetsuzo; Tatsura, Satoshi; Toyama, Wataru
 PA Fujitsu Ltd, Japan
 SO Jpn. Kokai Tokkyo Koho, 6 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM C09K011-06
 ICS C09K009-02; G02F001-15; H05B033-14
 CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 38

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05271651	A2	19931019	JP 1992-67917	19920326
PRAI	JP 1992-67917		19920326		

AB An electroluminescent element comprises: (1) an n electrode, (2) an n-polymer, (3) a phosphor, (4) a p-polymer, and (5) a p-electrode layer, wherein (3) comprises the phosphor monomer, or the monomers of (2); (3) and (4) form a **polymeric conjugated chain**; and the **polymers** are formed by gas-phase polymerization. An electrochromic element comprises: a cathode layer; an active layer comprising ≥ 1 linear polymer linking an electron block, a donor, and an acceptor unit; and an anode layer, wherein the manufacturing process using a vapor deposition comprises the steps of: forming a monomol. layer of a 1st monomer on a substrate; depositing a 2nd monomer onto the 1st monomer layer for forming a dimeric mol. of the 1st and the 2nd monomer; and forming a **conjugated polymeric chain** by a subsequent step-grown polycondensation. In both the elements, the polymer chains are approx. perpendicular to the electrode layers.

ST electroluminescent conductive polymer heterostructure vapor polymn; electrochromic conductive polymer heterostructure vapor deposition

IT Optical materials
 (conductive polymer pn heterostructures, electroluminescent and electrochromic elements from)

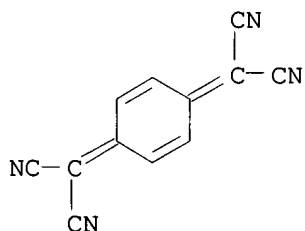
IT Electroluminescent devices
 (containing conductive polymer)

IT Semiconductor materials
 (polymeric, pn heterostructures from, electroluminescent and electrochromic elements containing)

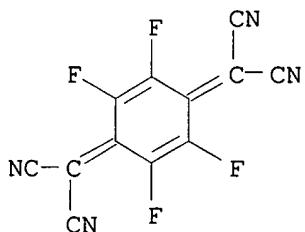
IT Optical imaging devices
 (electrochromic, containing conductive polymer heterostructure)

IT 154873-24-2
 RL: PRP (Properties)

(conductive, electroluminescent elements containing)
 IT **1518-16-7 29261-33-4**
 RL: PRP (Properties)
 (electrochromic elements from, as electron-acceptor component in polymer chains)
 IT 101-81-5 101-84-8
 RL: PRP (Properties)
 (electrochromic elements from, as electron-block component in polymer chains)
 IT **31366-25-3 51501-77-0 66946-48-3**
 RL: PRP (Properties)
 (electrochromic elements from, as electron-donor component in polymer chains)
 IT 23749-58-8 100734-29-0 101955-82-2 143761-89-1 156309-10-3
 RL: PRP (Properties)
 (electroluminescent elements containing, as monomeric or polymeric phosphors)
 IT 154874-31-4 154874-34-7
 RL: PRP (Properties)
 (n-conductive, electroluminescent elements containing)
 IT 25280-01-7 154873-21-9
 RL: PRP (Properties)
 (p-conductive, electroluminescent elements containing)
 IT **1518-16-7 29261-33-4**
 RL: PRP (Properties)
 (electrochromic elements from, as electron-acceptor component in polymer chains)
 RN 1518-16-7 HCAPLUS
 CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)



RN 29261-33-4 HCAPLUS
 CN Propanedinitrile, 2,2'-(2,3,5,6-tetrafluoro-2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)

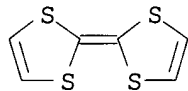


IT **31366-25-3 51501-77-0 66946-48-3**
 RL: PRP (Properties)

(electrochromic elements from, as electron-donor component in polymer chains)

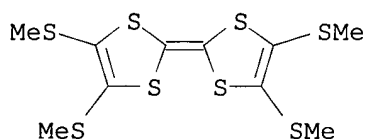
RN 31366-25-3 HCAPLUS

CN 1,3-Dithiole, 2-(1,3-dithiol-2-ylidene)- (9CI) (CA INDEX NAME)



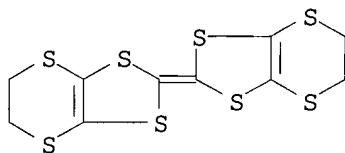
RN 51501-77-0 HCAPLUS

CN 1,3-Dithiole, 2-[4,5-bis(methylthio)-1,3-dithiol-2-ylidene]-4,5-bis(methylthio)- (9CI) (CA INDEX NAME)



RN 66946-48-3 HCAPLUS

CN 1,3-Dithiolo[4,5-b][1,4]dithiin, 2-(5,6-dihydro-1,3-dithiolo[4,5-b][1,4]dithiin-2-ylidene)-5,6-dihydro- (9CI) (CA INDEX NAME)



L92 ANSWER 12 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1992:175874 HCAPLUS

DN 116:175874

ED Entered STN: 03 May 1992

TI Preparation and composition of vulcanizable liquid block copolymer rubbers

IN Coolbaugh, Thomas Smith; Loveless, Frederick Charles; Matthews, Demetreos Nestor; Rudnick, Leslie Robert

PA Mobil Oil Corp., USA

SO Eur. Pat. Appl., 33 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM C08F236-04

ICS C08F297-02; C08F008-04

CC 39-4 (Synthetic Elastomers and Natural Rubber)

FAN.CNT 20

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 441485	A2	19910814	EP 1991-300317	19910116
	EP 441485	A3	19920318		
	EP 441485	B1	19960515		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE

US 5149895	A	19920922	US 1990-466135	19900116
CA 2034196	AA	19910717	CA 1991-2034196	19910115
CA 2034196	C	19980428		
FI 9100213	A	19910717	FI 1991-213	19910115
FI 99210	B	19970715		
FI 99210	C	19971027		
NO 9100162	A	19910717	NO 1991-162	19910115
AU 9169338	A1	19910718	AU 1991-69338	19910115
AU 649990	B2	19940609		
BR 9100180	A	19911022	BR 1991-180	19910116
CN 1055743	A	19911030	CN 1991-101147	19910116
CN 1051776	B	20000426		
JP 06128340	A2	19940510	JP 1991-216664	19910116
JP 07116272	B4	19951213		
AT 138083	E	19960615	AT 1991-300317	19910116
ES 2087238	T3	19960716	ES 1991-300317	19910116
NO 9703583	A	19910717	NO 1997-3583	19970804
WO 9925744	A1	19990527	WO 1997-US21224	19971118
W: AU, BR, CA, CN, JP, KR, MX, RU, SG				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9854492	A1	19990607	AU 1998-54492	19971118
EP 1032601	A1	20000906	EP 1997-948417	19971118
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
CN 1238345	A	19991215	CN 1999-106953	19990529
PRAI US 1990-466135	A	19900116		
WO 1997-US21224	A	19971118		

AB Vulcanizable liquid tri- or star-branched block copolymer rubbers, having unsatn. only in the terminal blocks, comprise ≥ 1 triblock I-B-I, wherein I is a block of polymerized conjugated $C \geq 5$ diene and B is a block of polymerized conjugated $C \geq 4$ diene, different from I, or alternatively, a block copolymer containing a minor proportion of an aryl-substituted olefin. The liquid rubbers can be vulcanized through a substantially perfect network exhibiting improved elastomeric properties and a high degree of oxidative and thermal stabilities. The rubbers are prepared by anionic polymerization of conjugated dienes, coupling, and selective hydrogenation. Thus, isoprene (I)-butadiene (II)-I triblock copolymer, prepared by anionic polymerization of I and II in the presence of BuLi, was selectively hydrogenated in the presence of Et₃Al and Ni octoate. The selectively hydrogenated rubber was cured using quinone dioxime, N-chlorosuccinimide, and ZnO without heating and aged at 50° at 3 h to give a solid nontacky rubber showing tensile strength 350 psi and elongation 200%.

ST unsatd liq block copolymer rubber; diene copolymer rubber selective hydrogenation; coupling diene copolymer rubber; isoprene block copolymer rubber; butadiene block copolymer rubber; vulcanization quinone dioxime unsatd rubber

IT Esters, reactions
Lewis bases
RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling by, of anionically polymerized conjugated dienes)

IT **Chains**, chemical
(coupling of, of living **conjugated diene copolymers**, in block **copolymer** rubber manufacture)

IT Rubber, butadiene, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(liquid, hydrogenation of, selective)

IT Hydrogenation catalysts

(nickel octoate and triethylaluminum, for conjugated diene block copolymer rubbers)

IT Rubber, synthetic
RL: USES (Uses)
(butadiene-isoprene, random, hydrogenated, manufacture and vulcanization of liquid)

IT Rubber, synthetic
RL: USES (Uses)
(butadiene-isoprene, hydrogenated, block, triblock, manufacture and vulcanization of liquid)

IT Rubber, synthetic
RL: USES (Uses)
(butadiene-isoprene-styrene, block, triblock, hydrogenated, manufacture and vulcanization of liquid)

IT Hydrogenation
(selective, of conjugated diene block copolymer rubbers)

IT 97-93-8, Triethylaluminum, uses 4995-91-9, Nickel (II) octoate
RL: CAT (Catalyst use); USES (Uses)
(catalysts, for selective hydrogenation of conjugated diene block copolymer rubbers)

IT 124-38-9, Carbon dioxide, reactions 7553-56-2, Iodine, reactions 10026-04-7, Silicon tetrachloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling by, of anionically polymerized conjugated dienes)

IT 1333-74-0
RL: USES (Uses)
(hydrogenation, selective, of conjugated diene block copolymer rubbers)

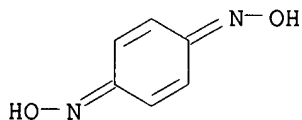
IT 25102-52-7DP, Butadiene-isoprene random copolymer, hydrogenated 109264-12-2DP, Butadiene-isoprene triblock copolymer, hydrogenated 110389-01-0DP, Butadiene-isoprene-styrene triblock copolymer, hydrogenated
RL: PREP (Preparation)
(manufacture and vulcanization of liquid)

IT 9003-17-2
RL: USES (Uses)
(rubber, liquid, hydrogenation of, selective)

IT **105-11-3**, Quinone dioxime
RL: USES (Uses)
(vulcanizing agents, for hydrogenated conjugated diene block copolymer rubbers)

IT **105-11-3**, Quinone dioxime
RL: USES (Uses)
(vulcanizing agents, for hydrogenated conjugated diene block copolymer rubbers)

RN 105-11-3 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione, dioxime (9CI) (CA INDEX NAME)



L92 ANSWER 13 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1979:72483 HCAPLUS
DN 90:72483
ED Entered STN: 12 May 1984
TI Polymerization of acetylene derivatives. Anion-radical salts of TCNQ with

poly(vinyl- and ethynylpyridines)

AU Simionescu, Cristofor I.; Dumitrescu, Svetlana; Percec, Virgil; Diaconu, Ilie

CS Rom.

SO Materiale Plastice (Bucharest, Romania) (1978), 15(2), 69-74
CODEN: MPLAAM; ISSN: 0025-5289

DT Journal

LA Romanian

CC 35-3 (Synthetic High Polymers)

AB The synthesis, structure, and elec. properties of anion-radical TCNQ salt-like complexes of vinylpyridine and ethynylpyridine polymers are reported. The complexes were prepared by quaternizing isotactic (I) and atactic 2-vinylpyridine (II) homopolymers, atactic 3-vinylpyridine homopolymer, and 2- or 3-ethynylpyridine homopolymer with MeI or EtI, mixing the quaternized polymers with Li TCNQ or TCNQ in MeCN, and refluxing 30 min to precipitate the complexes. Complexes from I polymer have better elec. conductivity than those from II polymer; the elec. conductivity varies inversely with the size of the alkyl groups, and is independent of the number of quaternized N groups of the polymer. **Conjugated** bonds in the **polymer chain** significantly affect the conductivity, but not unidirectionally.

ST TCNQ charge transfer complex; vinylpyridine polymer quaternary salt; ethynylpyridine polymer quaternary salt; radical anion TCNQ complex; elec cond charge transfer complex; tacticity charge transfer complex

IT Electric conductivity and conduction
(of ethynyl- and vinylpyridine polymer alkyl iodide salt TCNQ complexes)

IT Charge-transfer complexes
RL: USES (Uses)
(of vinyl and ethynylpyridine polymer alkyl iodide salts with TCNQ, elec. conductivity of)

IT Double bond
Tacticity
(of vinylpyridine polymer alkyl iodide salt-TCNQ complexes, elec. conductivity in relation to)

IT Radical ions
(anions, ethynyl- and vinylpyridine polymer alkyl iodide salt-TCNQ complexes, elec. conductivity of)

IT Quaternary ammonium compounds, properties
(ethynylpyridine polymer alkyl iodide salt-TCNQ complexes, structure and elec. conductivity of)

IT Polyelectrolytes
(quaternary ammonium compds., radical anion TCNQ complexes, elec. conductivity of)

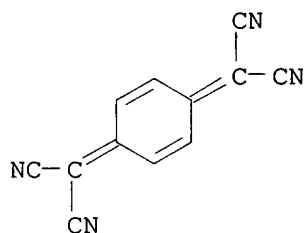
IT Quaternary ammonium compounds, properties
(vinylpyridine polymer alkyl iodide salt-TCNQ complexes, structure and elec. conductivity of)

IT 30607-89-7P 30773-17-2P 68564-26-1P 69253-95-8P 69253-96-9P
69253-97-0P 69253-98-1P 69253-99-2P 69255-58-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and complexation of, with TCNQ)

IT 25014-15-7P 27555-43-7P 28501-18-0P 30306-21-9P 30306-23-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and quaternization of)

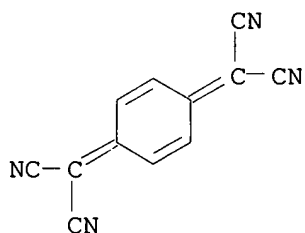
IT 55088-77-2P 55993-60-7P 69253-69-6P 69253-72-1P 69253-75-4P

69253-78-7P 69253-81-2P 69254-00-8P 69255-55-6P 69255-57-8P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation and structure and elec. conductivity of)
 IT 74-88-4, reactions 75-03-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (quaternization by, of ethynyl- and vinylpyridine polymers)
 IT **1283-90-5 1518-16-7**
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with ethynyl- and vinylpyridine polymer alkyl iodide
 salts)
 IT **1283-90-5 1518-16-7**
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with ethynyl- and vinylpyridine polymer alkyl iodide
 salts)
 RN 1283-90-5 HCAPLUS
 CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis-, radical
 ion(1-), lithium (9CI) (CA INDEX NAME)



● Li⁺

RN 1518-16-7 HCAPLUS
 CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA
 INDEX NAME)

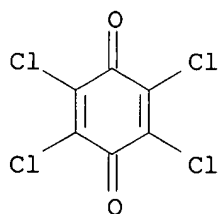


L92 ANSWER 14 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1964:61300 HCAPLUS
 DN 60:61300
 OREF 60:10800e-h,10801a-c
 ED Entered STN: 22 Apr 2001
 TI **Polymers** with a **conjugated** bond system in the
 macromolecular **chains** XXXVII. Synthesis of polymers with charged
 hetero atoms in the macromolecular chain (onium polymerization)
 AU Berlin, A. A.; Zhrebtsova, L. V.; Razvodovskii, E. F.

CS Inst. Chem.-Phys., Acad. Sci. U.S.S.R., Moscow
 SO Vysokomolekulyarnye Soedineniya (1964), 6(1), 58-63
 CODEN: VMSDA8; ISSN: 0042-9368
 DT Journal
 LA Unavailable
 CC 45 (Synthetic High Polymers)
 AB cf. CA 56, 2562e; 60, 667h; Wibaut and Broekman, CA 54, 3416d. "Onium" type polymerizations are for 4-chloropyridine (I) and 4-bromopyridine (II) and copolymerization of 4,4'-bipyridyl with 1,4-dibromobutane. While I and II polymerized easily, 2-chloro-, 2-bromo-, 3-chloro-, and 3-bromopyridines did not polymerize. Direct polymerizations of I and II in sealed glass tubes at 10-4 mm. were carried out at 0-210°, and the mol. weight of the polymers obtained was determined by analyzing for terminal Cl after removal of monomer residue in vacuo (3-5 hrs. at 1 mm.). Mol. wts. of poly-4-chloropyridines obtained at 0, 20, 50, 100, 165, and 210° were 400, 440, 460, 1360, 4360, and 1450, resp. The electron paramagnetic resonance (e.p.m.) signal values and electro-conductivity were also determined. Mol. wts. of II polymers obtained at 0, 100, and 150° were 1130, 1600, and 1920, resp. Polymerization of I in solution was carried out in glass tubes for 6 hrs. at 100°. The solvent and the monomer were stripped at 100° and 1 mm. The ultraviolet spectra were obtained 20-30 min. after preparing aqueous solns. The appearance of a yellow color in the I precedes polymerization. In an acid-free medium, the color appears after 3-4 days at 20°, 3-4 hrs. at 50°, or 5-7 min. at 100°, and the colored solution of I polymerizes in 2-3 weeks at 0-2°. The colorless I under these conditions does not change in 2-3 months. An ionic stepwise mechanism of I polymerization is presented. The reaction rate increases in the presence of AlCl₃ or FeCl₃ catalysts, which eliminate the induction period noticeable in the absence of catalysts. Addition of small amts. of chloranil or dibromobutane also increases the reaction rate. II polymerized more readily than I, and crystalline II polymerized at -1 to -2°. The solid-state polymerization was accelerated by preliminary ultraviolet treatment of crystals. Addns. of 0.5-1.0% KI also catalyze I polymerization, the monomer darkening and the reaction rate being increased. The formation of 4-iodopyridine is suggested. The I polymers obtained at 0, 20, and 50° and that decomposed at 210° were partially soluble in MeOH, EtOH, and HCONMe₂, while the polymers obtained at 100 and 165° were insol. All the polymers were completely soluble in H₂O and in HCl, those obtained at 165° with swelling. On dissolving in H₂SO₄, HCl was evolved. The ultraviolet spectra of aqueous solns. are displaced towards longer wavelengths with the increasing length of the I polymer chain, and the mol. coefficient of absorption is increased. In the infrared spectra, all I polymers have a common spectrum at 1700-700 cm.⁻¹, intensive absorption of the C:NC bond in the 1632-1614 cm.⁻¹ range, and an oscillation band of the pyridine ring at 1512-1490 cm.⁻¹. An 807 cm.⁻¹ band characteristic of p-substituted derivs. of aromatic compds. was also noticed. The infrared spectrum of poly(pyridinium chloride) obtained from II at 100° was the same as that of poly-I obtained at 100°, although the spectra of I and II are different. Expts. on polymerizing I in solution indicated that the reaction does not take place in hydrocarbons. In toluene, the polymer was formed only on the tube walls. In solvents with high dielec. constant, the reaction took place but the mol. weight of the polymers obtained (500-800) showed that the chains were broken by solvents. I polymer products, on prolonged storage in air or wet with H₂O and then vacuum dried, lost their e.p.r. signals. The copolymers of 4,4'-bipyridyl and 1,4-dibromobutane were obtained in blocks and in the toluene solution. These were in form of

yellow powders, completely soluble in H₂O and containing ionic Br. No e.p.r. signals were detected, indicating conjugation cleavage.

- IT Condensation, chemical
(amide polymers by, of nitrophthalio acid derivs. with 1,6-hexanediamine and 4,4'-isopropylidenediphenol, interfacial)
- IT Catalysts and Catalysis
(in polymerization, of pyridine derivs. with onium polymer formation, AlCl₃, FeCl₃, etc., as)
- IT Magnetic resonance absorption
Spectra, infrared
(of 1,3,5-triethynylbenzene polymers)
- IT Polymerization
(of pyridine derivs., onium structure formation in)
- IT Conductivity, electric and(or) Conduction, electric
Magnetic resonance absorption
Spectra, infrared
Spectra, visible and ultraviolet
(of pyridinium compound polymers)
- IT Conjugation
(polymers with, with charged hetero atoms in chain and onium structure)
- IT Polymers
(with conjugated bonds, with charged hetero atoms in chain and onium structure)
- IT Pyridinium, 1-[(piperidinocarbonyl)methyl]-, homopolymer
(by onium polymerization of pyridine derivs.)
- IT Pyridinium, 4-halo-
(salts, polymers)
- IT 7446-70-0, Aluminum chloride 7705-08-0, Iron chloride, FeCl₃
(catalysts in polymerization, of pyridine derivs. with onium polymer formation)
- IT **118-75-2**, p-Benzoquinone, tetrachloro- 7681-11-0, Potassium iodide
(catalysts, in polymerization of pyridine derivs. with onium polymer formation)
- IT 110-86-1, Pyridine
(derivs., onium polymerization of, pyridinium compound polymers from)
- IT 463-79-6, Carbonic acid
(polyesters)
- IT **118-75-2**, p-Benzoquinone, tetrachloro-
(catalysts, in polymerization of pyridine derivs. with onium polymer formation)
- RN 118-75-2 HCAPLUS
- CN 2,5-Cyclohexadiene-1,4-dione, 2,3,5,6-tetrachloro- (9CI) (CA INDEX NAME)



L92 ANSWER 15 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1964:53094 HCAPLUS
 DN 60:53094

OREF 60:9376a-c

ED Entered STN: 22 Apr 2001

TI Mass-spectrometric investigation of radiolysis of some polymers with conjugated bonds

AU Vasil'ev, G. K.; Tal'roze, V. L.

SO Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya (1963), (12), 2124-31

CODEN: IASKA6; ISSN: 0002-3353

DT Journal

LA Unavailable

CC 45 (Synthetic High Polymers)

AB A highly sensitive mass-spectrometric apparatus and procedure for the determination of

the composition and kinetics of the yield of gases by radiolysis of organic systems, up to 0.002-0.001 mole/100 e.v., are described. The method was applied to products of the reaction of chloranil with polyethylene, polypropylene, and poly(vinyl alc.), chloranil with polyacrylonitrile at .apprx.200°, and to Aniline Black hydrochloride and base, prepared by oxidizing aniline with a bichromate. Radiolysis yielded H, CO₂, and sometimes HCN. A connection was found between the yield of H and the activation energy of the electrocond. Thermolysis data indicate that the O in CO₂ is chemical bonded in the polymers. A study of the radiolysis yield of CO₂ shows that the effect of energy transfer to extraneous C-containing groups is negligible. The stability to radiation may be used as a measure of the "quality" of **conjugation** in the **polymer chains**.

IT Mass spectrometers

(for radiolysis products of conjugated polymers)

IT Gases

(formation or evolution of, from polymers by radiation, determination of)

IT Activation energy, Heat of activation

(of elec. conduction, of conjugated polymers, H formation by irradiation in relation to)

IT Reaction kinetics and(or) Velocity

(of polymer (conjugated) decomposition by irradiation)

IT Mass spectroscopy

(of polymer (conjugated) radiolysis products)

IT Conductivity, electric and(or) Conduction, electric

(of polymers (conjugated), activation energy of, H formation by irradiation in relation to)

IT Bonds

(oxygen, between CO₂ and irradiated conjugated polymers)

IT Radiation and Radiation effects

(polymers (conjugated) treated by, mass spectroscopy of decomposition products of)

IT Conjugation

(polymers with, radiolysis products of, mass spectroscopy of)

IT Polymers

(with conjugated bonds, radiolysis products of, mass spectroscopy of)

IT 7782-44-7, Oxygen

(bonds of, between CO₂ and irradiated conjugated polymers)

IT 25014-41-9, Acrylonitrile, homopolymer

(elec. charge prevention on, reaction products of, with chloranil, conjugated, radiolysis products of)

IT 74-90-8, Hydrocyanic acid

(formation of, from conjugated polymers by irradiation)

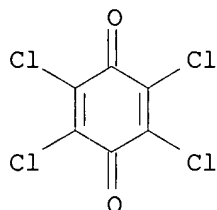
IT 124-38-9, Carbon dioxide

(formation of, from polymers conjugated by radiation)

IT 1333-74-0, Hydrogen

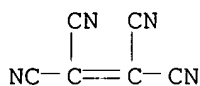
(formation or evolution of, from conjugated polymers by irradiation)

IT 9003-07-0, Propene polymers
 (reaction product with chloranil, conjugated, radiolysis products of)
 IT **118-75-2**, p-Benzoquinone, tetrachloro-
 (reaction product with polymers, conjugated, radiolysis products of)
 IT 9002-88-4, Ethylene polymers 9002-89-5, Vinyl alcohol polymers
 (reaction products with chloranil, conjugated, radiolysis products of)
 IT **118-75-2**, p-Benzoquinone, tetrachloro-
 (reaction product with polymers, conjugated, radiolysis products of)
 RN 118-75-2 HCAPLUS
 CN 2,5-Cyclohexadiene-1,4-dione, 2,3,5,6-tetrachloro- (9CI) (CA INDEX NAME)



L92 ANSWER 16 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1963:409368 HCAPLUS
 DN 59:9368
 OREF 59:1766d-f
 ED Entered STN: 22 Apr 2001
 TI Polymers with conjugated bonds and with heteroatoms in the
conjugated chains. XXI. Polymer complexes of
 tetracyano-ethylene
 AU Berlin, A. A.; Matveeva, N. G.; Sherle, A. I.; Kostrova, N. D.
 SO Vysokomolekulyarnye Soedineniya (1962), 4, 860-8
 CODEN: VMSDA8; ISSN: 0042-9368
 DT Journal
 LA Unavailable
 CC 45 (Synthetic High Polymers)
 AB cf. CA 58, 11475h. C₂(CN)₂, obtained from Br₂C(CN)₂, reacts with the
 acetylacetonates of Cu, Fe, and Mg at 160°-80° in evacuated
 ampuls and forms polymer-metal complexes which are black powders, soluble in
 HCONMe₂, pyridine, triethanolamine, and concentrated H₂SO₄. They are
 thermostable up to 400°-50°, partially crystalline,
 semiconductive, and possess enhanced magnetic susceptibility. The
 infrared spectrum shows no bands at 700-1200 cm.⁻¹ but a C.tplbond.N peak
 at 2210 cm.⁻¹ that disappears on heating. These polymers can be produced
 in form of a thin film on metallic surfaces by heating the metals with
 C₂(CN)₂ in evacuated ampuls at 150°-450° for 5-20 hrs.
 These films are chemical bonded to the metal and have an excellent
 durability. They are not affected by organic solvents, acids, or alkalies.
 These polychelates have branched chains and it may be assumed that they
 form ring structures similar to phthalocyanines.
 IT Coating(s)
 (from tetracyanoethylene metal complex polymers)
 IT Magnetic properties
 (of azophenylferrocene polymers)
 IT Magnetic susceptibility
 Molecular structure
 Spectra, infrared
 (of tetracyanoethylene metal complex polymers)

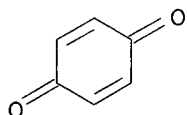
IT **Conjugation**
 (polymers with, with heteroatoms in **conjugated chain**)
 IT Semiconductors, electric
 (tetracyanoethylene metal complex polymers)
 IT **Polymers**
 (with **conjugated** bonds and heteroatoms in **chain**)
 IT Magnesium compounds, homopolymer
 IT 7440-50-8, Copper
 (compds., polymers (coordination))
 IT 123-54-6, 2,4-Pentanedione
 (metal complexes, polymers with ethenetetracarbonitrile)
 IT 7439-89-6, Iron
 (polymeric complexes)
 IT **670-54-2**, Ethenetetracarbonitrile
 (with 2,4-pentanedione metal complexes)
 IT **670-54-2**, Ethenetetracarbonitrile
 (with 2,4-pentanedione metal complexes)
 RN 670-54-2 HCAPLUS
 CN Ethenetetracarbonitrile (6CI, 8CI, 9CI) (CA INDEX NAME)



L92 ANSWER 17 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1962:484067 HCAPLUS
 DN 57:84067
 OREF 57:16852b-f
 ED Entered STN: 22 Apr 2001
 TI Polymers with a conjugated double bond system and with hetero atoms in the conjugated chain. XXII. Products of the reaction between disazo compounds and quinones
 AU Parini, V. P.; Kazakova, Z. S.; Okorokova, M. N.; Berlin, A. A.
 SO Vysokomolekulyarnye Soedineniya (1962), 4, 510-15
 CODEN: VMSDA8; ISSN: 0042-9368
 DT Journal
 LA Unavailable
 CC 47 (Plastics)
 GI For diagram(s), see printed CA Issue.
 AB cf. CA 57, 16620e. Polymers of the proposed general formula I where A is the corresponding aromatic group, were obtained by reaction of p-benzoquinone with disazo compds. prepared from p-phenylenediamine, benzidine, and benzidine-3,3'-dicarboxylic acid (II). To a solution of 5.43 g. p-phenylenediamine-di-HCl in 100 ml. of concentrated H2SO4 at 0°, a solution of 4.55 g. NaNO2 in 18 ml. concentrated H2SO4 was added. The solution obtained was dropped with stirring (0°) during 3 hrs. into a mixture of 42.5 g. H3PO4 with 7.5 g. H2O, the mixture was stirred another 0.5 hr., and, after addition of 1 g. of urea, was poured onto ice. The solution obtained was filtered and added at 0° to a suspension of 3.24 g. p-benzoquinone in 20 ml. 50% EtOH. After 12 hrs., the precipitate was filtered off, boiled with 5% HCl, washed with boiling H2O, and dried. A black powder was obtained. One part (0.57 g.) of it was insol.; another (1.88 g.) soluble in acetone. The preparation of polymers from benzidine di-HCl and from II was carried out either with neutralization of HCl by NaOAc or

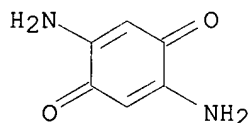
without neutralization. These polymers contain 5-15 rings/mol. The N content depends on the pH of the reaction mixture. It can be decreased by using $\leq 0.5\%$ NaOAc. The polymers have electron-exchange properties and give a narrow electron paramagnetic resonance signal with an integral intensity of 10-18 to 1020 of paramagnetic particles/g. Some of them lose $\leq 3\%$ of their weight at 300° , having elec. conds. of .apprx.10-10 ohm-cm. at room temperature, and react with heavy-metal salts with the probable formation of cross-linked chelate structures.

- IT Chemical compounds
(chelate, from **polymers** with hetero atoms in **conjugated chain**)
- IT Azo compounds
(diaz, reaction products with quinones, with hetero atoms in **conjugated chain of polymer**)
- IT Electron exchangers
(from p-benzoquinone polymers with disazo compds.)
- IT Conductivity, electric and(or) Conduction, electric
Magnetic resonance absorption
(of p-benzoquinone polymers with disazo compds.)
- IT Quinones
(reaction products with disazo compds., with hetero atoms in **conjugated chain of polymer**)
- IT **Polymers**
(with hetero atoms in **conjugated chain**)
- IT 106-50-3, p-Phenylenediamine 2130-56-5, 3,3'-Biphenyldicarboxylic acid, 4,4'-diamino-
(diaz derivs., reaction with benzoquinone, and **polymers** with hetero atoms in **conjugated chain** thereby)
- IT 92-87-5, Benzidine
(diazotied erythrocytes treated with, reaction with benzoquinone, and **polymers** with hetero atoms in **conjugated chain** thereby)
- IT 106-51-4, p-Benzoquinone
(reaction products with disazo compds.)
- IT 106-51-4, p-Benzoquinone
(reaction products with disazo compds.)
- RN 106-51-4 HCAPLUS
- CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



L92 ANSWER 18 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1961:147482 HCAPLUS
 DN 55:147482
 OREF 55:27956i,27957a
 ED Entered STN: 22 Apr 2001
 TI **Polymers** with **conjugated** bonds and heteroatoms in the **chain**. XII. Preparation and properties of certain polyaminoquinones
 AU Parini, V. P.; Kazakova, Z. S.; Okorokova, M. N.; Berlin, A. A.
 SO Vysokomolekulyarnye Soedineniya (1960), 2, 402-7
 CODEN: VMSDA8; ISSN: 0042-9368
 DT Journal

LA Unavailable
 CC 31 (Synthetic Resins and Plastics)
 AB Polyaminoquinones of the formula [- NHC: CH.C-(:O).C(NHR-):CH.C(:O)]_n, where R is (CH₂)₆, C₆H₄, C₁₂H₈, C₁₂H₆(CO₂H)₂, were synthesized by the interaction of p-benzoquinone with hexamethylenediamine, p-phenylenediamine, benzidine, and 3,3'-carboxybenzidine (I). The compds. are nonfusible, possess electron-exchange properties, and give intense electron resonance signals. The polymers obtained from aromatic diamines are thermally stable. The polymer prepared from I was characterized by somewhat enhanced electrocond. (10-10 ohm-1 cm.-1). On interaction with Cu salts in solution, it yields an insol. salt, which may be a cross-linked, chelate polymer.
 IT Quinones
 (amino, polymers of, preparation of)
 IT Conductivity, electric and(or) Conduction, electric
 (of para-benzoquinone polymers with 2,3'-dicarboxybenzidine)
 IT 183748-02-9, Electron
 (exchange or transfer of, by polyaminoquinones)
 IT **1521-06-8**, p-Benzoquinone, 2,5-diamino-
 (polymer derivs.)
 IT 7440-50-8, Copper
 (salts, reactions with p-benzoquinone-3,3'-dicarboxybenzidine polymers)
 IT **1521-06-8**, p-Benzoquinone, 2,5-diamino-
 (polymer derivs.)
 RN 1521-06-8 HCAPLUS
 CN 2,5-Cyclohexadiene-1,4-dione, 2,5-diamino- (9CI) (CA INDEX NAME)

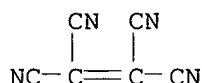


L92 ANSWER 19 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1961:68428 HCAPLUS
 DN 55:68428
 OREF 55:12977b-e
 ED Entered STN: 22 Apr 2001
 TI Electrical conductivity of polymers with conjugated double bonds
 AU Balabanov, E. I.; Berlin, A. A.; Parini, V. P.; Tal'roze, V. L.;
 Frankevich, E. L.; Cherkashin, M. I.
 SO Doklady Akademii Nauk SSSR (1960), 134, 1123-6
 CODEN: DANKAS; ISSN: 0002-3264
 DT Journal
 LA Unavailable
 CC 2 (General and Physical Chemistry)
 GI For diagram(s), see printed CA Issue.
 AB cf. CA 54, 16900a, 17954a, 25948f; 55, 6907f. A large number of
polymers with conjugation extending through an acyclic
chain or through linked benzene rings were prepared and their elec.
 properties studied. Elec. conductivity increases with temperature in accord
 with the
 expression, $\sigma = \sigma_0 e^{-E/kT}$, where σ_0 and E are
 substance-dependent consts. whose values vary greatly, not only from one
 polymer to another, but for differently prepared samples of the same
 polymer. E.g., for (PhC:CH)_n (I) tablet pressed at 200° E = 15.4

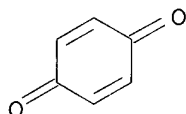
kcal./mole, $\sigma_0 = 2.10 + 10^{-4} \text{ ohm}^{-1} \text{ cm}^{-1}$; film from solvent E = 49.5 kcal./mole, $\sigma_0 = 4.10 + 10^{18}$. Values for E vary from 4.6 kcal./mole for $[-\text{C}_6\text{H}_4\text{N}:\text{C}:\text{CH}:\text{CH}:\text{C}(\text{:N-})\text{CH}:\text{CH}]_n$ to 49.5 kcal./mole for I to 92 kcal./mole for a complex of acenaphthene with chloranil (II). Values for σ_0 vary from $10^{-12} \text{ ohm}^{-1} \text{ cm}^{-1}$ for $\text{Cl}(\text{C}_6\text{H}_4)_n\text{Cl}$ to $6.4 + 10^{51}$ for II. Despite this great variation the actual values for σ at 27° vary only from 10^{-6} to 10^{-20} .

- IT Activation energy
 - (Heat of activation, of elec. conduction, of polymers with conjugated double bonds)
- IT Double bonds
 - (conjugated, polymers with, elec. conductivity of)
- IT Polymers
 - (elec. conductivity of)
- IT Conjugation
 - (in polymers, elec. conductivity of)
- IT Frequency factor
 - (of elec. conductivity, of polymers with conjugated double bonds)
- IT Conductivity, electric and(or) Conduction, electric
 - Electric properties
 - (of polymers, with conjugated double bonds)
- IT Ferrocene, 1,1',2,2'-tetrasalicyl-
 - Iron, bis[bis(4-carboxy-3-hydroxyphenyl)cyclopentadienyl]-
 - Salicylic acid, 4,4'-(cyclopentadienylene)di-, iron derivative
 - (and polymers of Be and Fe complexes, elec. conductivity of)
- IT Benzidine, polymers with p-benzoquinone and 2,5-dichloro-p-benzoquinone
 - (and their Cu complexes, elec. conductivity of)
- IT 1,6-Hexanediamine, polymer with p-benzoquinone
 - 3,3'-Biphenyldicarboxylic acid, 4,4'-diamino-, polymers with p-benzoquinone
 - 3,3'-Biphenyldicarboxylic acid, 4,4'-dichloro-, polymers with 4,4'-azo-bis[4'-chloro-3,3'-biphenyldicarboxylic acid]
 - 3,3'-Biphenyldicarboxylic acid, 4,4'-azobis[4'-chloro-, polymers with 4,4'-dichloro-3,3'-biphenyldicarboxylic acid
 - 3,3'-Biphenyldicarboxylic acid, 4-(p-benzoquinonylazo)-, polymers with 4-(p-benzoquinonyl)-3,3'-biphenyldicarboxylic acid
 - 3,3'-Biphenyldicarboxylic acid, 4-p-benzoquinonyl-, polymers with 4-(p-benzoquinonylazo)-3,3'-biphenyldicarboxylic acid
 - Acenaphthene, compds. with chloranil
 - Azobenzene, 4,4'-bis(p-chlorophenyl)-, polymers with 4,4'-dichlorobiphenyl
 - Benzene, ethynyl-, polymers of, with p-diethynylbenzene and with 1-hexyne
 - Benzene, p-dichloro-, polymers of
 - Benzene, p-diethynyl-, polymers with ethynylbenzene
 - Beryllium compounds, with 4,4'-(cyclopentadienylene)disalicylic acid Fe derivative
 - Biphenyl, 4,4'-dichloro-, polymers with 4,4'-bis(p-chlorophenyl)azobenzene
 - Chloranil, compds. with acenaphthene
 - Copper, compounds, with benzidine-p-benzoquinone polymers and with ethenetetracarbonitrile
 - Indoaniline, homopolymer
 - Iron, compound with 4,4'-(cyclopentadienylene)disalicylic acid Fe derivative
 - Iron, compound with ethenetetracarbonitrile
 - Pyridone, polymers with p-benzoquinone and p-phenylenediamine
 - Triazene, 1-(4-biphenyl)-, polymers of
 - m,m'-Bitolyl, 4,4'-dichloro-, polymers with 4,4'-bis(4-chloro-m-tolyl)-o,o'-azotoluene
 - o,o'-Azotoluene, 4,4'-bis(4-chloro-m-tolyl)-, polymers with 4,4'-dichloro-m,m'-bitolyl
 - p-Benzoquinone, (4-biphenyl)-, polymers with (4-biphenylazo)-p-

benzoquinone
 p-Benzoquinone, (4-biphenylazo)-, polymers with (4-biphenyl)-p-benzoquinone
 p-Benzoquinone, 2,5-dichloro-, polymers with benzidine
 p-Phenylenediamine, polymer with p-benzoquinone
 p-Phenylenediamine, polymer with p-benzoquinone and pyridone
 (elec. conductivity of)
 IT 25038-69-1, Benzene, ethynyl-, homopolymer 186350-46-9, 1-Hexyne, polymer with ethynylbenzene
 (elec. conductivity of)
 IT 670-54-2, Ethenetetracarbonitrile
 (polymers of Cu and Fe complexes, elec. conductivity of)
 IT 106-51-4, p-Benzoquinone
 (polymers with diamines, and their Cu complexes, elec. conductivity of)
 IT 670-54-2, Ethenetetracarbonitrile
 (polymers of Cu and Fe complexes, elec. conductivity of)
 RN 670-54-2 HCAPLUS
 CN Ethenetetracarbonitrile (6CI, 8CI, 9CI) (CA INDEX NAME)



IT 106-51-4, p-Benzoquinone
 (polymers with diamines, and their Cu complexes, elec. conductivity of)
 RN 106-51-4 HCAPLUS
 CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)

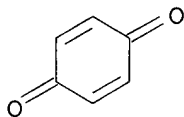


L92 ANSWER 20 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1960:135850 HCAPLUS
 DN 54:135850
 OREF 54:25948b-e
 ED Entered STN: 22 Apr 2001
 TI **Polymers with conjugated bonds in the macromolecular chains.** IV. Some properties of **polymers** with heterogeneous atoms in the **conjugated chains**
 AU Blyumenfel'd, L. A.; Berlin, A. A.; Matveeva, N. G.; Kalmanson, A. E.
 SO Vysokomolekulyarnye Soedineniya (1959), 1, 1647-51
 CODEN: VMSDA8; ISSN: 0042-9368
 DT Journal
 LA Unavailable
 CC 31 (Synthetic Resins and Plastics)
 AB cf. CA 54, 16899i. Polyaminoquinone (I) samples obtained from chloranil and benzidine give a narrow electronic paramagnetic resonance (e.p.r.) signal, the distance between the points of maximum slope being 8 oe. and the g-factor of the free electron being devoid of superfine structure. This bears evidence of the presence of unpaired electrons, the concentration of which is 1017-1018/g. With sufficient degree of polymerization of I, the

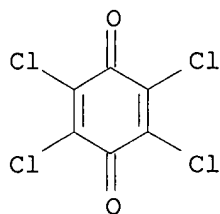
intensive broad asymmetric e.p.r. lines are observed, indicating greater quantity of unpaired electrons (concentration 1020-10-21/g.) and the presence of

intrinsic internal anisotropic fields in the system. When the temperature is lowered to 80°K. the e.p.r. spectrum suddenly disappears. This is similar to the e.p.r. spectra of paramagnetic substances of the Cr2O3 type with antiferromagnetic properties. Possibly the emanation of unpaired electrons is not associated with the presence of conjugated bonds in the system but with an ordered system of polar groups. The metal complex (Cu 8-15%) of I and Cu(OAc)2 gives an e.p.r. spectrum practically the same as that of I, only differing in increased intensity of the signal and strong absorption in the zero field. The effect of introducing metal ions in I on the changes in the spectrum is attributed to addnl. structure formation through the coordination bonds of the metal atom and not to the presence of unpaired electrons in the metal ion.

- IT Polymers
- IT Polymers
- IT Double bonds
- IT Double bonds
- IT (conjugated, in polymer macromol. chains)
- IT Magnetic resonance absorption
- IT (of aminoquinone polymers from benzidine and chloranil)
- IT 74-86-2, Acetylene
- IT (aryl derivs., polymerization of, and properties of polymers)
- IT 7440-50-8, Copper
- IT (compounds, with polymeric amino derivs. of p-benzoquinone)
- IT 106-51-4, p-Benzoquinone
- IT (polymeric amino derivs., and Cu complexes)
- IT 118-75-2, Chloranil
- IT (reaction products with benzidine, magnetic resonance absorption and unpaired electrons in)
- IT 92-87-5, Benzidine
- IT (reaction products with chloranil, magnetic properties and unpaired electrons in)
- IT 183748-02-9, Electron
- IT (unpaired, in polyaminoquinone from benzidine and chloranil)
- IT 106-51-4, p-Benzoquinone
- IT (polymeric amino derivs., and Cu complexes)
- RN 106-51-4 HCAPLUS
- CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)

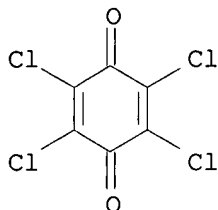


- IT 118-75-2, Chloranil
- IT (reaction products with benzidine, magnetic resonance absorption and unpaired electrons in)
- RN 118-75-2 HCAPLUS
- CN 2,5-Cyclohexadiene-1,4-dione, 2,3,5,6-tetrachloro- (9CI) (CA INDEX NAME)

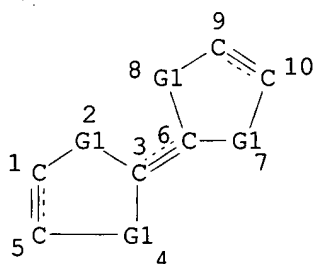


L92 ANSWER 21 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1960:89082 HCAPLUS
 DN 54:89082
 OREF 54:16899i,16900a-b
 ED Entered STN: 22 Apr 2001
 TI **Polymers** with **conjugated** bonds in the macromolecular
chains. III. On polyaminoquinones
 AU Berlin, A. A.; Matveeva, N. G.
 SO Vysokomolekulyarnye Soedineniya (1959), 1, 1643-6
 CODEN: VMSDA8; ISSN: 0042-9368
 DT Journal
 LA Unavailable
 CC 31 (Synthetic Resins and Plastics)
 AB cf. CA 53, 7092b. For the syntheses of the new polymer the reaction
 between quinone and different organic compds. containing NH₂ groups are used.
 From all syntheses, the best results were obtained with 1 mole
 p,p'-diaminobiphenyl and 1 mole tetrachloroquinone dissolved in EtOH and
 boiled 8 hrs. in 2 moles NaOAc. The yield was 94.1%. The new resin,
 named polyaminoquinone, contained C 66.2, H 5.47, N 7.73, and Cl 1.27%.
 It is black, insol. in most solvents and soluble in concentrated H₂SO₄. Its
 mol. weight is about 2000. Two Cl atoms in the monomer can be easily substituted;
 this gives virtually unlimited possibilities of polymer conversions. It
 can also form polymer complexes with metal salts. Aromatic
 polyaminoquinones and their complexes possess paramagnetic properties
 ($\chi = 1.28 + 10^{-6}$). It exhibits narrow and broad lines in the
 infrared spectra, bearing evidence of the presence of unpaired electrons.
 IT Polymers
 IT Plastic materials and Resinous products
 (from chloranil condensation products with benzidine)
 IT **Conjugation**
 (in **polymers**, in macromol. **chain**)
 IT Infrared spectra
 Magnetism
 (of benzidine-chloranil condensation products)
 IT Quinones
 (reaction products with amines)
 IT Amines
 (reaction product, with quinones)
 IT **118-75-2, Chloranil**
 (reaction products with benzidine, and magnetic properties, metal-salt
 complexes and spectra thereof)
 IT 92-87-5, Benzidine
 (reaction products with chloranil, magnetic properties and unpaired
 electrons in)
 IT **118-75-2, Chloranil**
 (reaction products with benzidine, and magnetic properties, metal-salt

complexes and spectra thereof)
 RN 118-75-2 HCAPLUS
 CN 2,5-Cyclohexadiene-1,4-dione, 2,3,5,6-tetrachloro- (9CI) (CA INDEX NAME)



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 L2 3 SEA FILE=REGISTRY ABB=ON (1518-16-7/BI OR 25233-30-1/BI OR 31366-25-3/BI)
 L4 64659 SEA FILE=REGISTRY ABB=ON 46.150.9/RID
 L5 4093 SEA FILE=REGISTRY ABB=ON L4 AND 1/NR AND 2/O
 L11 24589 SEA FILE=REGISTRY ABB=ON 591.49.52/RID
 L12 5505 SEA FILE=REGISTRY ABB=ON L11 AND 2/O
 L13 1892 SEA FILE=REGISTRY ABB=ON L12 AND 2/NR
 L16 350 SEA FILE=REGISTRY ABB=ON L4 AND CYANO AND 1/NR
 L17 259 SEA FILE=REGISTRY ABB=ON L16 AND 2-4/N
 L21 81850 SEA FILE=REGISTRY ABB=ON 1839.6.36/RID
 L22 5957 SEA FILE=REGISTRY ABB=ON L21 AND 3/NR AND (1/O OR 2/N)
 L23 84 SEA FILE=REGISTRY ABB=ON L22 AND DICYANO
 L24 44 SEA FILE=REGISTRY ABB=ON L22 AND DINITRIL?
 L25 121 SEA FILE=REGISTRY ABB=ON L23 OR L24
 L27 134 SEA FILE=REGISTRY ABB=ON L22 AND 1/O AND OXO
 L28 253 SEA FILE=REGISTRY ABB=ON L25 OR L27
 L31 3910 SEA FILE=REGISTRY ABB=ON 16.145.6/RID
 L32 79933 SEA FILE=REGISTRY ABB=ON (DINITRIL? OR DICYANO?)
 L33 210 SEA FILE=REGISTRY ABB=ON L31 AND L32
 L34 STR

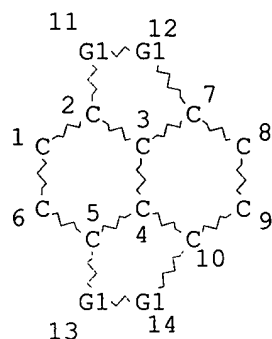


VAR G1=S/SE/TE
 NODE ATTRIBUTES:
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE

L36 SCR 1839
 L38 SCR 2022
 L39 SCR 1935 AND 2019
 L40 SCR 1926 AND 2019
 L42 SCR 2127
 L44 SCR 1842
 L46 SCR 134 OR 1773
 L48 3373 SEA FILE=REGISTRY SSS FUL L34 AND L36 AND (L38 OR L39 OR L40)
 AND L46 NOT (L42 OR L44)
 L52 167 SEA FILE=REGISTRY ABB=ON 591.49.33/RID
 L53 77 SEA FILE=REGISTRY ABB=ON L52 AND (DICYANO? OR DINITRIL?)
 L56 28 SEA FILE=REGISTRY ABB=ON 2508.17.32/RID
 L57 15 SEA FILE=REGISTRY ABB=ON L56 AND 4/N
 L58 13 SEA FILE=REGISTRY ABB=ON L57 AND (DINITRIL? OR DICYAN?)
 L61 STR



VAR G1=S/SE/TE

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 14

STEREO ATTRIBUTES: NONE

L63 666 SEA FILE=REGISTRY SSS FUL L61
 L66 2542 SEA FILE=REGISTRY ABB=ON 46.160.3/RID
 L67 199 SEA FILE=REGISTRY ABB=ON L66 AND 2/NR AND (2/S OR (1/S AND
 (1/TE OR 1/SE)))
 L71 7 SEA FILE=REGISTRY ABB=ON L66 AND 2/NR AND (2/TE OR (1/TE AND
 (1/S OR 1/SE)))
 L74 363 SEA FILE=REGISTRY ABB=ON 46.162.2/RID
 L75 55 SEA FILE=REGISTRY ABB=ON L74 AND 2/NR AND (2/SE OR (1/SE AND
 (1/S OR 1/TE)))
 L76 7 SEA FILE=REGISTRY ABB=ON C6N4/MF
 L77 8 SEA FILE=REGISTRY ABB=ON C10N6/MF
 L78 10 SEA FILE=REGISTRY ABB=ON (L76 OR L77) NOT 1-20/NR
 L79 24096 SEA FILE=HCAPLUS ABB=ON L5
 L80 12745 SEA FILE=HCAPLUS ABB=ON L13
 L81 5026 SEA FILE=HCAPLUS ABB=ON L17
 L82 381 SEA FILE=HCAPLUS ABB=ON L28
 L83 85 SEA FILE=HCAPLUS ABB=ON L53 OR L58
 L84 3342 SEA FILE=HCAPLUS ABB=ON L78
 L85 74 SEA FILE=HCAPLUS ABB=ON L33

L86 3409 SEA FILE=HCAPLUS ABB=ON L48
 L87 555 SEA FILE=HCAPLUS ABB=ON L63
 L88 116 SEA FILE=HCAPLUS ABB=ON L67 OR L71 OR L75
 L89 43572 SEA FILE=HCAPLUS ABB=ON (L79 OR L80 OR L81 OR L82 OR L83 OR
 L84 OR L85 OR L86 OR L87 OR L88)
 L92 21 SEA FILE=HCAPLUS ABB=ON L89 AND (RESIN# OR ?POLYMER?) (6A)?CONJ
 UGAT?(5A)?CHAIN?
 L99 1 SEA FILE=REGISTRY ABB=ON L2 AND PMS/CI
 L100 11318 SEA FILE=HCAPLUS ABB=ON L99 OR POLYANILINE OR EMERALDIN?
 L101 157 SEA FILE=HCAPLUS ABB=ON L89 AND L100
 L102 18 SEA FILE=HCAPLUS ABB=ON L101 AND CONJUGAT?
 L103 19 SEA FILE=HCAPLUS ABB=ON L101 AND ?CHAIN?
 L104 32 SEA FILE=HCAPLUS ABB=ON (L92 OR L102 OR L103) NOT L92

=> d l104 1-32 all hitstr

Compounds and specific polymer - polyaniline

L104 ANSWER 1 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2004:162290 HCAPLUS
 DN 140:202432
 ED Entered STN: 29 Feb 2004
 TI Biobased microbattery
 IN Stanish, Ivan; Singh, Alok
 PA USA
 SO U.S. Pat. Appl. Publ., 15 pp., Cont.-in-part of U.S. Ser. No. 939,288.
 CODEN: USXXCO
 DT Patent
 LA English
 IC ICM H01M004-60
 ICS H01M004-66
 NCL 429213000; 429245000
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 9, 63

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004038128	A1	20040226	US 2003-644558	20030819
	US 2003039885	A1	20030227	US 2001-939288	20010824
	US 6680142	B2	20040120		
PRAI	US 2001-939288	A2	20010824		

AB A galvanic cell has a cathode, an anode, and an electrolyte. The cathode and anode each have vesicles, an electroactive species encapsulated into the vesicles, a conducting substrate, and functionalized tethers immobilizing the vesicles to the substrates. The electrolyte is in contact with both conducting substrates. At least some of the vesicles contain benzoquinone and/or hydroquinone.

ST microbattery biobased; battery micro biobased

IT Battery cathodes
 Biological materials
 Chelating agents
 Electron acceptors
 Electron donors
 Liposomes
 Potentiometers
 Primary batteries
 (biobased microbattery)

IT Phospholipids, uses
 RL: DEV (Device component use); USES (Uses)
 (biobased microbattery)

IT Carotenes, processes
 Viologens
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
 (caroviologens, electron mediator; biobased microbattery)

IT Polyenes
 RL: TEM (Technical or engineered material use); USES (Uses)
 (**conjugated**, tether; biobased microbattery)

IT Ubiquinones
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
 (electron mediator; biobased microbattery)

IT Polyenes
 RL: TEM (Technical or engineered material use); USES (Uses)
 (nonconjugated, tether; biobased microbattery)

IT Alloys, uses
 Metals, uses
 Polyanilines
 Polymers, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (substrate; biobased microbattery)

IT Quaternary ammonium compounds, uses
 RL: DEV (Device component use); USES (Uses)
 (surfactant; biobased microbattery)

IT Polyacetylenes, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (tether; biobased microbattery)

IT Amphiphiles
 (vesicle-forming; biobased microbattery)

IT 3436-44-0, Didecanoyl phosphatidylcholine 76078-28-9 84271-00-1
 503269-46-3 651712-29-7
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
 (biobased microbattery)

IT 50-81-7, Ascorbic acid, uses 83-88-5, Riboflavin, uses **106-51-4**
 , 2,5-Cyclohexadiene-1,4-dione, uses 123-31-9, Hydroquinone, uses
 1309-37-1, Ferric oxide, uses 7439-96-5D, Manganese, chelates
 13408-62-3, Ferricyanide 13408-63-4, Ferrocyanide 13943-58-3,
 Potassium ferrocyanide 20074-52-6D, Iron(3+), chelates, uses
 RL: DEV (Device component use); USES (Uses)
 (biobased microbattery)

IT 1405-97-6, Gramicidin 11054-70-9, Lasalocid 17090-79-8, Monensin
 28380-24-7, Nigericin 52665-69-7, Calcimycin 56092-81-0, Ionomycin
 RL: MOA (Modifier or additive use); USES (Uses)
 (cationic carrier; biobased microbattery)

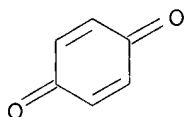
IT 60-00-4, Edta, processes 126-44-3, Citrate, processes 11070-68-1,
 Glutamate, processes
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
 (chelating agent; biobased microbattery)

IT 84-65-1, Anthraquinone 102-54-5, Ferrocene
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
 (electron mediator; biobased microbattery)

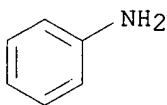
IT 12001-79-5, Vitamin K
 RL: MOA (Modifier or additive use); USES (Uses)
 (electron mediator; biobased microbattery)

IT 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-16-6,

Rhodium, uses 7440-22-4, Silver, uses 7440-31-5, Tin, uses 7440-57-5, Gold, uses **25233-30-1, Polyaniline** 30604-81-0, Polypyrrole 50926-11-9, Ito
 RL: TEM (Technical or engineered material use); USES (Uses)
 (substrate; biobased microbattery)
 IT 25038-69-1, Polyphenylacetylene 25067-58-7, Polyacetylene
 RL: TEM (Technical or engineered material use); USES (Uses)
 (tether; biobased microbattery)
 IT **106-51-4**, 2,5-Cyclohexadiene-1,4-dione, uses
 RL: DEV (Device component use); USES (Uses)
 (biobased microbattery)
 RN 106-51-4 HCAPLUS
 CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



IT **25233-30-1, Polyaniline**
 RL: TEM (Technical or engineered material use); USES (Uses)
 (substrate; biobased microbattery)
 RN 25233-30-1 HCAPLUS
 CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)
 CM 1
 CRN 62-53-3
 CMF C6 H7 N

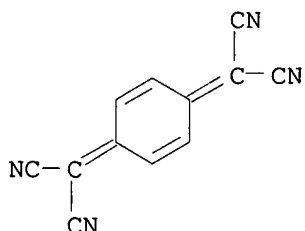


L104 ANSWER 2 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2004:154672 HCAPLUS
 DN 140:207229
 ED Entered STN: 26 Feb 2004
 TI Material for organic electroluminescent device and organic electroluminescent device
 IN Seo, Satoshi; Yamazaki, Hiroko
 PA Semiconductor Energy Laboratory Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 31 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM H05B033-14
 ICS C08K005-08; C08K005-315; C08K005-46; C08L101-00; H05B033-22
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 FAN.CNT 1

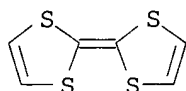
applicant

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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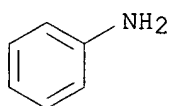
PI JP 2004063363 A2 20040226 JP 2002-222451 20020731
 CN 1483784 A 20040324 CN 2003-127778 20030729
 PRAI JP 2002-222451 A 20020731
 OS MARPAT 140:207229
 AB The invention relates to an organic electroluminescent device comprising a buffer layer and an electroluminescent layer sandwiched between a pair of electrodes, wherein the buffer layer is composed of an organic solvent-compatible **conjugated** polymer, such as **emeraldine** base **polyaniline** (EB-PANI) and a organic solvent-compatible electron-acceptor or donor mol., typically tetracyanoquinodimethane and tetrathiafulvalene, resp., for reducing the operational voltage.
 ST org electroluminescent device **emeraldine** base **polyaniline** acceptor donor
 IT Conducting polymers
 Electroluminescent devices
 (material for organic electroluminescent device)
 IT Polyanilines
 RL: DEV (Device component use); USES (Uses)
 (material for organic electroluminescent device)
 IT **1518-16-7**, TCNQ
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
 (acceptor; material for organic electroluminescent device)
 IT **31366-25-3**, Tetrathiafulvalene
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
 (donor; material for organic electroluminescent device)
 IT **25233-30-1**, **Polyaniline**
 RL: DEV (Device component use); USES (Uses)
 (material for organic electroluminescent device)
 IT **1518-16-7**, TCNQ
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
 (acceptor; material for organic electroluminescent device)
 RN 1518-16-7 HCAPLUS
 CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)



IT **31366-25-3**, Tetrathiafulvalene
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
 (donor; material for organic electroluminescent device)
 RN 31366-25-3 HCAPLUS
 CN 1,3-Dithiole, 2-(1,3-dithiol-2-ylidene)- (9CI) (CA INDEX NAME)



IT 25233-30-1, **Polyaniline**
 RL: DEV (Device component use); USES (Uses)
 (material for organic electroluminescent device)
 RN 25233-30-1 HCAPLUS
 CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)
 CM 1
 CRN 62-53-3
 CMF C6 H7 N



L104 ANSWER 3 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2003:591240 HCAPLUS
 DN 139:142025
 ED Entered STN: 01 Aug 2003
 TI Doping **conjugated** polymers with electron acceptors
 IN Zaidi, Naveed; Giblin, Sean; Terry, Ian; Monkman, Andrew
 PA The University of Durham, UK
 SO PCT Int. Appl., 39 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM C08G073-02
 ICS H01B001-12
 CC 76-2 (Electric Phenomena)
 Section cross-reference(s): 77
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003062305	A1	20030731	WO 2003-GB254	20030124
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
PRAI GB 2002-1593	A	20020124		

AB In a preferred embodiment, the **conjugated** polymer is **polyaniline** and the electron acceptor is tetracyanoquinodimethane (TCNQ). The material is preferably ferromagnetic at room temperature (290K)

and, most preferably, is ferromagnetic at temps. above room temperature

ST electron acceptor doped **conjugated** polymer ferromagnet; TCNQ doped **polyaniline** ferromagnet

IT Conducting polymers
Dopants
Doping
Electric conductors
Electron donors
Ferromagnetic materials
(doping **conjugated** polymers with electron acceptors to manufacture ferromagnets)

IT Poly(arylenealkenylenes)
Polyamines
Polyanilines
Polyphenyls
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(doping **conjugated** polymers with electron acceptors to manufacture ferromagnets)

IT **84-58-2**, DDQ **670-54-2**, TCNE, uses **1518-16-7**, TCNQ **6251-01-0**, TNAP
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(doping **conjugated** polymers with electron acceptors to manufacture ferromagnets)

IT 25013-01-8, Polypyridine 25190-62-9, Poly-p-phenylene **25233-30-1**, **Polyaniline** 25233-34-5, Polythiophene 30604-81-0, Polypyrrole 95270-88-5, Polyfluorene 96638-49-2, Polyphenylene-vinylene
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(doping **conjugated** polymers with electron acceptors to manufacture ferromagnets)

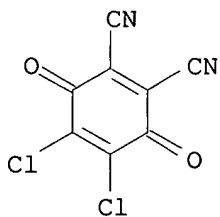
RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
(1) Nippon Soda Co; JP 05287088 A 1993 HCAPLUS
(2) Ricoh Kk; JP 05047211 A 1993 HCAPLUS

IT **84-58-2**, DDQ **670-54-2**, TCNE, uses **1518-16-7**, TCNQ **6251-01-0**, TNAP
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(doping **conjugated** polymers with electron acceptors to manufacture ferromagnets)

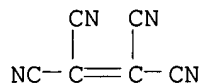
RN 84-58-2 HCAPLUS

CN 1,4-Cyclohexadiene-1,2-dicarbonitrile, 4,5-dichloro-3,6-dioxo- (6CI, 8CI, 9CI) (CA INDEX NAME)



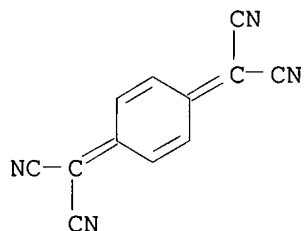
RN 670-54-2 HCAPLUS

CN Ethenetetracarbonitrile (6CI, 8CI, 9CI) (CA INDEX NAME)



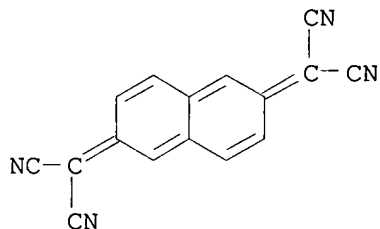
RN 1518-16-7 HCAPLUS

CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)



RN 6251-01-0 HCAPLUS

CN Propanedinitrile, 2,2'-(2,6-naphthalenediylidene)bis- (9CI) (CA INDEX NAME)



IT 25233-30-1, **Polyaniline**

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(doping **conjugated** polymers with electron acceptors to manufacture ferromagnets)

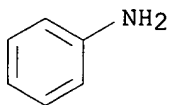
RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3

CMF C6 H7 N



L104 ANSWER 4 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2003:491535 HCAPLUS
 DN 139:61319
 ED Entered STN: 27 Jun 2003
 TI Organic NTC thermistor materials and devices and manufacturing thereof
 IN Kawaguchi, Toshiyuki; Takahashi, Masayuki
 PA Shin-Etsu Polymer Co., Ltd., Japan
 SO PCT Int. Appl., 23 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 IC ICM H01C007-04
 ICS C08G061-12; C08L065-00; C08L101-00
 CC 76-3 (Electric Phenomena)
 Section cross-reference(s): 38

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003052777	A1	20030626	WO 2002-JP13089	20021213
	W:				
	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,				
	CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,				
	GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,				
	LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,				
	PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ,				
	UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD,				
	RU, TJ, TM				
	RW:				
	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG,				
	CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,				
	PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,				
	MR, NE, SN, TD, TG				
PRAI	JP 2001-381849	A	20011214		
AB	An organic NTC material is obtained by mixing 1 weight-part conjugated organic semiconductor polymer with either ≥ 2 weight-parts thermoplastic or thermosetting resin. The conjugated organic semiconductor polymer is preferably selected from solvent-soluble polyaniline , polythiophene, polypyrrole, and their derivs. Therefore, an organic NTC device is obtainable at low temperature without expensive composite rare earth/transition oxides.				
ST	conjugated org semiconductor polymer neg temp coeff thermistor; polyaniline conjugated semiconductor polymer neg temp coeff thermistor; polythiophene conjugated semiconductor polymer neg temp coeff thermistor; polypyrrole conjugated semiconductor polymer neg temp coeff thermistor				
IT	Polyamides, properties				
	RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses) (binder; organic NTC thermistor semiconductor materials and devices and manufacturing thereof)				
IT	Semiconductor materials				
	(conjugated organic polymer; organic NTC thermistor semiconductor materials and devices and manufacturing thereof)				
IT	Thermistors				
	(neg.-temperature-coefficient; organic NTC thermistor semiconductor materials and devices and manufacturing thereof)				
IT	Plastics, properties				
	RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses) (thermoplastics; organic NTC thermistor semiconductor materials and devices and manufacturing thereof)				
IT	Plastics, properties				

RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
 (thermosetting; organic NTC thermistor semiconductor materials and devices and manufacturing thereof)

IT 25068-38-6, Epikote 1001 27027-40-3, Acrylonitrile-butyl methacrylate copolymer
 RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
 (binder; organic NTC thermistor semiconductor materials and devices and manufacturing thereof)

IT 100424-56-4, Poly(methyl 3-methyl-4-pyrrole carboxylate) 110864-38-5, Poly(3-phenylaniline) 126213-51-2, Polyethylenedioxythiophene 129933-82-0, Poly(butyl 3-methyl-4-pyrrole carboxylate)
 RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (**conjugated** semiconductor material; organic NTC thermistor semiconductor materials and devices and manufacturing thereof)

IT 168679-01-4, Adeka EH 335
 RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
 (curing agent; organic NTC thermistor semiconductor materials and devices and manufacturing thereof)

IT **1518-16-7**, Tetracyanoquinodimethane
 RL: MOA (Modifier or additive use); USES (Uses)
 (dopant; organic NTC thermistor semiconductor materials and devices and manufacturing thereof)

IT 104-15-4, p-Toluenesulfonic acid, uses 115-86-6, Triphenylphosphate 64535-52-0
 RL: MOA (Modifier or additive use); USES (Uses)
 (organic NTC thermistor semiconductor materials and devices and manufacturing thereof)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

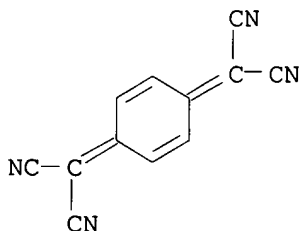
RE

(1) Kurabe Industrial Co Ltd; JP 03-211702 A 1991
 (2) Kurabe Industrial Co Ltd; JP 03-255923 A 1991
 (3) Mitsubishi Electric Corp; JP 61-145808 A 1986
 (4) Nok Kabushiki Kaisha; JP 06-45105 A 1994 HCAPLUS
 (5) Tdk Corp; JP 05-267008 A 1993
 (6) Tokyo Shibaura Electric Co Ltd; JP 59-43502 A 1984

IT **1518-16-7**, Tetracyanoquinodimethane
 RL: MOA (Modifier or additive use); USES (Uses)
 (dopant; organic NTC thermistor semiconductor materials and devices and manufacturing thereof)

RN 1518-16-7 HCAPLUS

CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)



L104 ANSWER 5 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2002:640558 HCAPLUS

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

DN 137:370431
 ED Entered STN: 25 Aug 2002
 TI Palladium-catalyzed synthesis of oligo(methylthio)aniline and conversion to polyacene-type electrolytes bearing phenothiazinium repeating units
 AU Oyaizu, Kenichi; Mitsunashi, Fumio; Tsuchida, Eishun
 CS Advanced Research Institute for Science and Engineering, Waseda University, Tokyo, 169-8555, Japan
 SO Macromolecular Chemistry and Physics (2002), 203(10/11), 1328-1336
 CODEN: MCHPES; ISSN: 1022-1352
 PB Wiley-VCH Verlag GmbH
 DT Journal
 LA English
 CC 35-7 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 36, 76
 AB The synthetic routes to ladder polymers which consist of benzene-tetrayl subunits with imino and methylsulfonio linkages are described. As the key intermediate, oligo- and **polyaniline** derivs. having pendant methylthio groups were prepared by the Pd-catalyzed aryl amination from various monomers. The oxidation of the polymers with H₂O₂ in the presence of CH₃COOH effects conversion of methylthio to methylsulfinyl groups in high yield without formation of undesired methylsulfonyl groups. The superacid-induced condensation of the polymers under dilution conditions induced the polymer-analogous intramol. electrophilic ring closure reaction of the hydroxy(methyl)(phenyl)sulfonium cation onto the adjacent benzene ring to yield the ladder polymers. The ladder polymers are semiconductors with intrinsic elec. conductivity of ca. 10⁻⁵ S·cm⁻¹.
 ST ladder phenothiazinium polyacene prepn ring closure superacid induced condensation; palladium catalyst amination **polyaniline** methylthio group; oxidn **polyaniline** methylthio methylsulfinyl group ladder polymer; elec cond **polyaniline** phenothiazinium semiconductor ladder polymer
 IT NMR (nuclear magnetic resonance)
 (C-13 CP/MAS; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)
 IT Methylation
 (N-methylation; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)
 IT Condensation reaction
 (Swern condensation; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)
 IT Ladder polymers
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (aromatic, phenothiazinium containing; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)
 IT Polymers, preparation
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (**conjugated**, phenothiazinium-based, ladder; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)
 IT Polymerization
 (cyclopolymn.; preparation of monomers and Pd-catalyzed polymerization of

oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT Polyanilines
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (methylthio-containing; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT Demethylation
 (nucleophilic; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT Conducting polymers
 (phenothiazinium-based; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT Polyphenyls
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (phenothiazinium-based; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT Acetylation
 Amination
 Bromination
 Cyclocondensation reaction
 Electric conductivity
 Oxidation
 Polyelectrolytes
 Semiconductor materials
 Thermal stability
 (preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT Polyacenes
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT 51364-51-3, Tris(dibenzylideneacetone)dipalladium
 RL: CAT (Catalyst use); USES (Uses)
 (amination polymerization catalyst; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT 98327-87-8, BINAP
 RL: CAT (Catalyst use); USES (Uses)
 (catalyst ligand; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT 1493-13-6, Triflic acid
 RL: CAT (Catalyst use); USES (Uses)
 (condensation polymerization catalyst; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT 1518-16-7

RL: RGT (Reagent); RACT (Reactant or reagent)

(demethylation reagent; preparation of monomers and Pd-catalyzed polymerization of

oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT 140-50-1P, N,N'-Diacetyl-1,4-phenylenediamine 699-20-7P,
1,4-Bis(methylthio)benzene 6310-41-4P, N-Acetyl-2-(methylthio)aniline
91799-47-2P, N-Acetyl-N-methyl-2-(methylthio)aniline 475089-03-3P,
N-Acetyl-N-methyl-3-bromo-6-(methylthio)aniline 475089-08-8P,
N-Acetyl-4-bromo-2-(methylthio)aniline

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(intermediate; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT 475089-10-2DP, methylsulfinyl derivs. and cyclized polymers and demethylated polymers 475089-11-3DP, methylsulfinyl derivs. and cyclized polymers and demethylated polymers

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(ladder polymer; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT 475089-07-7P, 4-Bromo-2-(methylthio)aniline

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(monomer and intermediate; preparation of monomers and Pd-catalyzed polymerization

of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT 3010-30-8P, N,N'-Diethyl-1,4-phenylenediamine 84910-84-9P,
2,5-Dibromo-1,4-bis(methylthio)benzene 475089-04-4P,
N-Methyl-3-bromo-6-(methylthio)aniline 475089-09-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(monomer; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT 475089-05-5P, Poly(methylimino-6-methylthio-1,3-phenylene) 475089-06-6P,
N-Methyl-3-bromo-6-(methylthio)aniline homopolymer 475089-10-2P,
2,5-Dibromo-1,4-bis(methylthio)benzene-N,N'-Diethyl-1,4-phenylenediamine
copolymer 475089-11-3P, 2,5-Dibromo-1,4-bis(methylthio)benzene-N,N'-
Diethyl-1,4-phenylenediamine copolymer, SRU 475089-12-4P,
N-Ethyl-4-bromo-2-(methylthio)aniline homopolymer 475089-13-5P,
Poly(ethylimino-2-methylthio-1,4-phenylene) 475089-14-6P,
4-Bromo-2-(methylthio)aniline homopolymer 475089-15-7P,
Poly(imino-2-methylthio-1,4-phenylene)

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(oligomer; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT 7722-84-1, Hydrogen peroxide, reactions

RL: RGT (Reagent); RACT (Reactant or reagent)

(oxidative polymerization reagent; preparation of monomers and Pd-catalyzed polymerization

of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT 865-48-5

RL: CAT (Catalyst use); USES (Uses)
 (polymerization initiator; preparation of monomers and Pd-catalyzed polymerization of
 oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT 67-68-5, DMSO, reactions 74-88-4, Methyl iodide, reactions 75-36-5, Acetyl chloride 100-68-5, Thioanisole 106-50-3, 1,4-Phenylenediamine, reactions 108-24-7, Acetic anhydride 2987-53-3, 2-(Methylthio)aniline 7726-95-6, Bromine, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT 475089-16-8P 475089-17-9P 475089-18-0P 475089-19-1P

RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

IT 16853-85-3

RL: RGT (Reagent); RACT (Reactant or reagent)
 (reducing reagent; preparation of monomers and Pd-catalyzed polymerization of
 oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

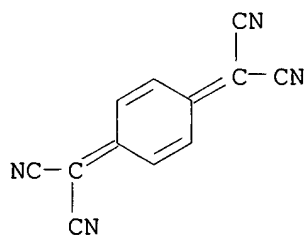
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IT 1518-16-7

RL: RGT (Reagent); RACT (Reactant or reagent)
 (demethylation reagent; preparation of monomers and Pd-catalyzed polymerization of
 oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

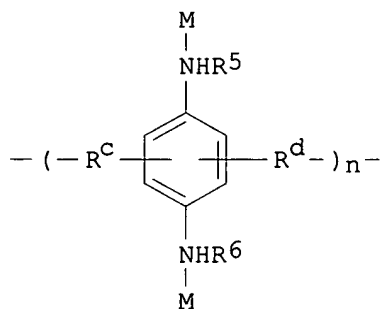
RN 1518-16-7 HCAPLUS

CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)



L104 ANSWER 6 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2002:479992 HCAPLUS
 DN 137:49370
 ED Entered STN: 26 Jun 2002
 TI Electrically responding phenylazomethine complex or polymer complex for secondary battery and redox catalyst
 IN Yamamoto, Kimitoshi; Higuchi, Masayoshi; Saikai, Toyohiko; Takagi, Kumiko
 PA Foundation for Scientific Technology Promotion, Japan
 SO Jpn. Kokai Tokkyo Koho, 10 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM C07C251-24
 ICS B01J031-22; C07C211-56; C07C321-30; C07F001-02; C07F005-00; C07F007-22; C08G061-02; H01M004-60; C08G073-02; H01M004-02; H01M010-40
 CC 49-7 (Industrial Inorganic Chemicals)
 Section cross-reference(s): 35, 52, 67
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002179635	A2	20020626	JP 2000-380981	20001214
PRAI	JP 2000-380981		20001214		
OS	MARPAT 137:49370				
GI					



I

AB Elec. responding phenylazomethine complexes MRN:C(R1)ArC(R2):NRaM (Ar = aromatic π **conjugated** substituent; R1 and R2 = H or (substituted) hydrocarbyl; R and Ra = alkyl or aromatic; M = rare earth or halogenated metal) are claimed. Alternatively, elec. responding polyphenylazomethine complexes [MN:C(R3)ArC(R4):N(M)Rb]n (Ar = aromatic π **conjugated** substituent; R3 and R4 = H or (substituted))

hydrocarbyl; Rb = hydrocarbylene; M = rare earth or halogenated metal; n ≥ 1 integer) are claimed. Alternatively, elec. responding polyphenylenediamine complexes I (R5 and R6 = H or (substituted) hydrocarbyl; Rc and Rd = (substituted) hydrocarbylene; M = rare earth or halogenated metal; n ≥ 1 integer) are claimed. Alternatively, elec. responding **polyaniline** complexes containing **polyaniline** coordinated with a rare earth ion or a halogenated metal are claimed. Cathode materials using the above complexes are also claimed. Redox catalysts using the above complexes are also claimed. The cathode materials provide long service life and rapid response and the redox catalysts provide multielectron transfer with good thermal stability.

ST phenylazomethine complex elec responding cathode battery;
polyphenylazomethine complex elec responding redox catalyst;
polyphenylenediamine metal halide complex elec responding;
polyaniline rare earth complex elec responding

IT Polyazomethines
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(complexes; elec. responding polyphenylazomethine complex for secondary battery and redox catalyst)

IT Battery cathodes
Redox reaction catalysts
(elec. responding phenylazomethine complex or polymer complex for secondary battery and redox catalyst)

IT Polythiophenylenes
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(elec. responding polyphenylenediamine complex for secondary battery and redox catalyst)

IT Polyanilines
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(lanthanum complex; elec. responding **polyaniline** complex for secondary battery and redox catalyst)

IT 7439-91-ODP, Lanthanum, **polyaniline** complex 25233-30-1DP
, **Polyaniline**, lanthanum complex
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(elec. responding **polyaniline** complex for secondary battery and redox catalyst)

IT 117897-79-7P 325963-57-3P 409318-68-9P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation and polymerization of; in preparation of elec. responding polyphenylenediamine complex)

IT 438626-78-9P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of; in preparation of elec. responding phenylazomethine complex)

IT 325963-56-2P 409318-72-5P 438626-80-3P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of; in preparation of elec. responding polyphenylenediamine complex)

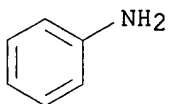
IT 7439-91-ODP, Lanthanum, complex with bis[(α -phenyl)phenylazomethine]benzene 7447-41-8DP, Lithium chloride, complex with bis[(α -phenyl)phenylazomethine]benzene 7772-99-8DP, Tin(II)

- chloride, complex with bis[(α -phenyl)phenylazomethine]benzene
 438626-78-9DP, complex with rare earth or halogenated metal
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (preparation of; elec. responding phenylazomethine complex for secondary battery and redox catalyst)
- IT 7440-53-1DP, Europium, complex with polyphenylenediamine 409318-72-5DP, europium complex 438626-80-3DP, europium complex
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (preparation of; elec. responding polyphenylenediamine complex for secondary battery and redox catalyst)
- IT 51124-99-3P 438626-79-0P
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (preparation of; in preparation of elec. responding polyphenylazomethine complex)
- IT 325963-58-4P 325963-59-5P 501954-22-9P
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (preparation of; in preparation of elec. responding polyphenylenediamine complex)
- IT 3016-97-5, 1,4-Dibenzoylbenzene
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with aniline; in preparation of elec. responding phenylazomethine complex)
- IT **1633-14-3**, 2,5-Dibromo-1,4-benzoquinone
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with aniline; in preparation of elec. responding polyphenylenediamine complex)
- IT 62-53-3, Aniline, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with dibenzoylbenzene; in preparation of elec. responding phenylazomethine complex)
- IT 74-31-7, N,N'-Diphenyl-1,4-phenylenediamine 92-86-4, 4,4'-Dibromobiphenyl 19362-77-7, 4,4'-Thiobisbenzenethiol
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of; in preparation of elec. responding polyphenylenediamine complex)
- IT **25233-30-1DP, Polyaniline**, lanthanum complex
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (elec. responding **polyaniline** complex for secondary battery and redox catalyst)
- RN 25233-30-1 HCAPLUS
 CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3

CMF C6 H7 N

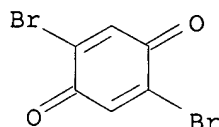


- IT **1633-14-3**, 2,5-Dibromo-1,4-benzoquinone
 RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with aniline; in preparation of elec. responding polyphenylenediamine complex)

RN 1633-14-3 HCAPLUS

CN 2,5-Cyclohexadiene-1,4-dione, 2,5-dibromo- (9CI) (CA INDEX NAME)



L104 ANSWER 7 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:219616 HCAPLUS

DN 137:63569

ED Entered STN: 22 Mar 2002

TI A new functionalized conductive polymer poly(2-methyl-5-amino-1,4-naphthoquinone) (PMANQ) with two distinct redox systems

AU Hubert, S.; Pham, M. C.; Dao, Le H.; Piro, B.; Nguyen, Q. A.; Hedayatullah, M.

CS ITODYS, UMR CNRS 7086, Universite Paris 7-Denis Diderot, Paris, 75005, Fr.

SO Synthetic Metals (2002), 128(1), 67-81

CODEN: SYMEDZ; ISSN: 0379-6779

PB Elsevier Science B.V.

DT Journal

LA English

CC 35-7 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 36, 72, 76

AB The electrochem. oxidation of 2-methyl-5-amino-1,4-naphthoquinone (MANQ) on platinum or glassy carbon (GC) electrodes in acetonitrile was used to prepare poly(2-methyl-5-amino-1,4-naphthoquinone) (PMANQ) as films. The films were characterized by UV-VIS, XPS, ex situ FT-IR, and in situ multiple internal reflection FT-IR spectroscopies (MIRFT-IRS). The polymer structure is similar to that of **polyaniline**, bearing one methylquinone group per monomer unit. The redox potential and electrochem. cycling of PMANQ films in organic and aqueous media were studied by

MIRFT-IRS and in situ d.c. conductivity The conductivity depends on the oxidation level of the π - **conjugated chain**; on oxidation, maximum conductivity $\sigma = 0.6 \text{ S-cm}^{-1}$, was observed at about +0.6 V. At higher potentials, the conductivity falls down, due to the transition from the polaronic form (very

conducting) to the bipolaronic form (less conducting). The polymer presents two sep. redox systems, the hydroquinone/quinone and the Ar-NH **chain** which are both stable. The quinone group exchanges cations for the charge-compensating process.

ST methylamino naphthoquinone monomer prepn electrooxidative polymn redox activity; redox system mol polymethylamino naphthoquinone conducting polymer; cond oxidn level **conjugated chain** polymethylamino naphthoquinone

IT Polymers, preparation

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(**conjugated**; preparation and redox electrochem. and polaron state

dependence of conductivity of poly(Me-amino-naphthoquinone) conducting

polymer

with dual internal redox system)

- IT Redox reaction
(electrochem., hydroquinone/quinone; preparation and redox electrochem. and polaron state dependence of conductivity of poly(Me-amino-naphthoquinone) conducting polymer with dual internal redox system)
- IT Polymerization
(electrochem., oxidative; preparation and redox electrochem. and polaron state dependence of conductivity of poly(Me-amino-naphthoquinone) conducting polymer with dual internal redox system)
- IT Polyanilines
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(methyl-amino-naphthoquinone; preparation and redox electrochem. and polaron state dependence of conductivity of poly(Me-amino-naphthoquinone) conducting polymer with dual internal redox system)
- IT Electric conductivity
(potential dependence; preparation and redox electrochem. and polaron state dependence of conductivity of poly(Me-amino-naphthoquinone) conducting polymer with dual internal redox system)
- IT FMO (molecular orbital)
Mannich reaction
Polaron
Redox potential
UV and visible spectra
(preparation and redox electrochem. and polaron state dependence of conductivity of poly(Me-amino-naphthoquinone) conducting polymer with dual internal redox system)
- IT 116415-32-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; preparation and redox electrochem. and polaron state dependence of conductivity of poly(Me-amino-naphthoquinone) conducting polymer with dual internal redox system)
- IT **116415-35-1P**, 2-Methyl-5-amino-1,4-naphthoquinone
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(monomer; preparation and redox electrochem. and polaron state dependence of conductivity of poly(Me-amino-naphthoquinone) conducting polymer with dual internal redox system)
- IT **439152-09-7P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and redox electrochem. and polaron state dependence of conductivity of poly(Me-amino-naphthoquinone) conducting polymer with dual internal redox system)
- IT 50-00-0, Formaldehyde, reactions 83-55-6, 5-Amino-1-naphthol 110-91-8, Morpholine, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation and redox electrochem. and polaron state dependence of conductivity of poly(Me-amino-naphthoquinone) conducting polymer with dual internal redox system)
- IT 116415-34-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and redox electrochem. and polaron state dependence of conductivity of poly(Me-amino-naphthoquinone) conducting polymer with dual internal redox system)

redox system)

RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD
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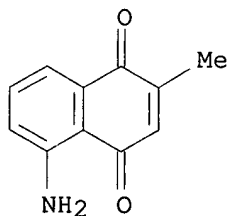
IT 116415-35-1P, 2-Methyl-5-amino-1,4-naphthoquinone

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)

(monomer; preparation and redox electrochem. and polaron state dependence of
conductivity of poly(Me-amino-naphthoquinone) conducting polymer with dual
internal redox system)

RN 116415-35-1 HCAPLUS

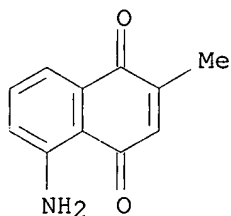
CN 1,4-Naphthalenedione, 5-amino-2-methyl- (9CI) (CA INDEX NAME)



IT 439152-09-7P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and redox electrochem. and polaron state dependence of
conductivity of
poly(Me-amino-naphthoquinone) conducting polymer with dual internal

redox system)
 RN 439152-09-7 HCAPLUS
 CN 1,4-Naphthalenedione, 5-amino-2-methyl-, homopolymer (9CI) (CA INDEX NAME)
 CM 1
 CRN 116415-35-1
 CMF C11 H9 N O2



L104 ANSWER 8 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2002:170908 HCAPLUS
 DN 137:47461
 ED Entered STN: 08 Mar 2002
 TI **Conjugated** systems composed of transition metals and redox-active π - **conjugated** ligands
 AU Hirao, Toshikazu
 CS Department of Applied Chemistry, Osaka University, Faculty of Engineering, Osaka, Suita, Yamada-oka, 565-0871, Japan
 SO Coordination Chemistry Reviews (2002), 226(1-2), 81-91
 CODEN: CCHRAM; ISSN: 0010-8545
 PB Elsevier Science B.V.
 DT Journal; General Review
 LA English
 CC 35-0 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 78
 AB A review. Combinations of transition metals and π - **conjugated** mols. or polymers as redox-active ligands as hybrid **conjugated** complexes are described. A variety of structural designs are possible based on the coordination number and geometry, affording an efficient multi-redox system. **Conjugated** complexes with p-quinone, p-quinonediimine, and **polyaniline** derivs. to give bimetallic, metallocyclic, and polymeric complexes are discussed. Complexes with polyanilines used in catalytic oxidation, e.g., Wacker oxidation, in which the π - **conjugated** polymers serve as a redox-active ligand are also described.
 ST review **conjugated** polymer transition metal complex structure redox; quinone quinonediimine transition metal redox complex review; **polyaniline** transition metal redox complex oxidn catalyst review; Wacker oxidn **conjugated** polymer redox active ligand review
 IT Oxidation catalysts
 (Wacker reaction; structure of transition metal/redox-active π - **conjugated** ligands and **polyaniline**-based complexes as catalysts in Wacker oxidation)
 IT Polymers, properties
 RL: PRP (Properties)
 (**conjugated**; structure of transition metal/redox-active π -

conjugated ligands and **polyaniline**-based complexes as catalysts in Wacker oxidation)

IT Coordination number
Redox reaction
(structure of transition metal/redox-active π - **conjugated** ligands and **polyaniline**-based complexes as catalysts in Wacker oxidation)

IT Ligands
Transition metal complexes
Transition metals, properties
RL: PRP (Properties)
(structure of transition metal/redox-active π - **conjugated** ligands and **polyaniline**-based complexes as catalysts in Wacker oxidation)

IT Polyanilines
RL: CAT (Catalyst use); PRP (Properties); USES (Uses)
(transition metal complexes, Wacker oxidation catalysts; structure of transition metal/redox-active π - **conjugated** ligands and **polyaniline**-based complexes as catalysts in Wacker oxidation)

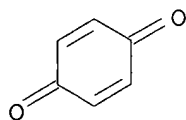
IT **106-51-4D**, p-Quinone, transition metal complexes 4377-73-5D, p-Quinonediimine, transition metal complexes
RL: PRP (Properties)
(structure of transition metal/redox-active π - **conjugated** ligands and **polyaniline**-based complexes as catalysts in Wacker oxidation)

IT **25233-30-1, Polyaniline**
RL: CAT (Catalyst use); PRP (Properties); USES (Uses)
(transition metal complexes, Wacker oxidation catalysts; structure of transition metal/redox-active π - **conjugated** ligands and **polyaniline**-based complexes as catalysts in Wacker oxidation)

RE.CNT 78 THERE ARE 78 CITED REFERENCES AVAILABLE FOR THIS RECORD
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- IT 106-51-4D, p-Quinone, transition metal complexes
 RL: PRP (Properties)
 (structure of transition metal/redox-active π - conjugated
 ligands and **polyaniline**-based complexes as catalysts in
 Wacker oxidation)
- RN 106-51-4 HCAPLUS
 CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



IT **25233-30-1, Polyaniline**

RL: CAT (Catalyst use); PRP (Properties); USES (Uses)
 (transition metal complexes, Wacker oxidation catalysts; structure of
 transition metal/redox-active π - **conjugated** ligands and
polyaniline-based complexes as catalysts in Wacker oxidation)

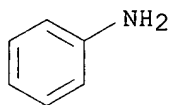
RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3

CMF C6 H7 N



L104 ANSWER 9 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2001:672592 HCAPLUS

DN 135:372111

ED Entered STN: 14 Sep 2001

TI Optically Active **Polyaniline** Derivatives Prepared by Electron
 Acceptor in Organic System: Chiroptical Properties

AU Su, Shi-Jian; Kuramoto, Noriyuki

CS Graduate Program of Human Sensing and Functional Sensor Engineering,
 Graduate School of Science and Engineering Yamagata University, Yonezawa
 Yamagata, 992-8510, Japan

SO Macromolecules (2001), 34(21), 7249-7256

CODEN: MAMOBX; ISSN: 0024-9297

PB American Chemical Society

DT Journal

LA English

CC 35-7 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 36, 76

AB A novel synthetic process was developed to yield optically active
polyaniline derivs. (PANIs) prepared by electron acceptor,
 2,3-dichloro-5,6-dicyanobenzoquinone (DDQ), using either (+)- or
 (-)-camphorsulfonic acid (CSA) as the chiral inductor in organic media.
 Either thin films of PANIs/(+)-CSA and PANIs/(-)-CSA or their solns.
 exhibit mirror-imaged CD (CD) spectra in the visible region, indicating
 diastereoselection in the electron-transfer polymerization in the presence of
 chiral inductor. The films were confirmed to remain their chiral
 configuration during reversible dedoping/redoping cycles in solid state.
 Unique chiroptical properties of PANIs/(+)- or (-)-CSA dissolved in
 m-cresol indicate that there exists a solvent effect on the PANIs'
chain conformations and subsequent chiroptical properties, and the
 solvent effect is strongly dependent upon the structure of parent monomer
 and nature of various organic solvents. The PANIs' **chain**

conformation in m-cresol solution forms during the dissoln., and it can be hardly changed by postintroduction of a little amount of another solvent due to the stable interactions among polymer backbone, CSA, and m-cresol for maintaining optical activity. However, PMOA doped with the same one-hand CSA can appear in the inverse CD spectrum when dissolved in cosolvent of m-cresol and DMSO at various volume ratios.

- ST chiral induction camphorsulfonic acid aniline electron transfer polymn; anisidine toluidine polymn chiral induction camphorsulfonic acid; conformation CD cond **polyaniline** polyanisidine polytoluidine
- IT Polymer **chains**
 (conformation; preparation of optically active **polyaniline** derivs. by electron transfer polymerization in the presence of camphorsulfonic acid chiral inductor)
- IT Bipolaron
 Circular dichroism
 Conducting polymers
 Cyclic voltammetry
 Doping
 Electric conductivity
 Solvent effect
 (preparation of optically active **polyaniline** derivs. by electron transfer polymerization in the presence of camphorsulfonic acid chiral inductor)
- IT Optically active compounds
 Polyanilines
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (preparation of optically active **polyaniline** derivs. by electron transfer polymerization in the presence of camphorsulfonic acid chiral inductor)
- IT Polymerization
 (stereoselective; preparation of optically active **polyaniline** derivs. by electron transfer polymerization in the presence of camphorsulfonic acid chiral inductor)
- IT 1336-21-6, Ammonium hydroxide ((NH₄)(OH))
 RL: NUU (Other use, unclassified); USES (Uses)
 (dedoping agent; preparation of optically active **polyaniline** derivs. by electron transfer polymerization in the presence of camphorsulfonic acid chiral inductor)
- IT 7647-01-0, Hydrochloric acid, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (dopant; preparation of optically active **polyaniline** derivs. by electron transfer polymerization in the presence of camphorsulfonic acid chiral inductor)
- IT **84-58-2**, 2,3-Dichloro-5,6-dicyanobenzoquinone
 RL: NUU (Other use, unclassified); USES (Uses)
 (electron acceptor; preparation of optically active **polyaniline** derivs. by electron transfer polymerization in the presence of camphorsulfonic acid chiral inductor)
- IT 3144-16-9, (+)-Camphorsulfonic acid 35963-20-3, (-)-Camphorsulfonic acid
 RL: NUU (Other use, unclassified); USES (Uses)
 (preparation of optically active **polyaniline** derivs. by electron transfer polymerization in the presence of camphorsulfonic acid chiral inductor)
- IT **25233-30-1P, Polyaniline** 97917-08-3P,
 Poly(o-toluidine) 99742-70-8P, Poly(o-anisidine)
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(preparation of optically active **polyaniline** derivs. by electron transfer polymerization in the presence of camphorsulfonic acid chiral inductor)

RE.CNT 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD
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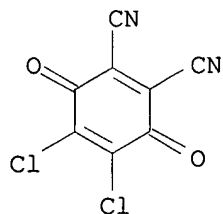
IT 84-58-2, 2,3-Dichloro-5,6-dicyanobenzoquinone

RL: NUU (Other use, unclassified); USES (Uses)

(electron acceptor; preparation of optically active **polyaniline** derivs. by electron transfer polymerization in the presence of camphorsulfonic acid chiral inductor)

RN 84-58-2 HCAPLUS

CN 1,4-Cyclohexadiene-1,2-dicarbonitrile, 4,5-dichloro-3,6-dioxo- (6CI, 8CI, 9CI) (CA INDEX NAME)



IT 25233-30-1P, **Polyaniline**

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation of optically active **polyaniline** derivs. by electron
transfer polymerization in the presence of camphorsulfonic acid chiral
inductor)

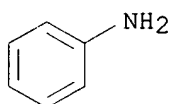
RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3

CMF C6 H7 N



L104 ANSWER 10 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2001:618212 HCAPLUS

DN 135:177678

ED Entered STN: 24 Aug 2001

TI Protein and peptide sensors using electrical detection methods

IN Sawyer, Jaymie Robin; Li, Changming; Choong, Vi-En; Maracas, George;
Zhang, Peiming

PA Motorola, Inc., USA

SO PCT Int. Appl., 53 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C12Q001-68

CC 9-1 (Biochemical Methods)

Section cross-reference(s): 6, 10, 15

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001061053	A2	20010823	WO 2001-US5476	20010220
	WO 2001061053	A3	20020314		
	WO 2001061053	C2	20021017		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,
HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,
LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,
SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,
YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

EP 1257820 A2 20021120 EP 2001-911028 20010220

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

PRAI US 2000-506178 A2 20000217

WO 2001-US5476 W 20010220

AB The present invention provides an apparatus and methods for the elec. detection of mol. interactions between a probe mol. and a protein or peptide target mol., but without requiring the use of electrochem. or other reporters to obtain measurable signals. The methods can be used for elec. detection of mol. interactions between probe mols. bound to defined regions of an array and protein or peptide target mols. which are permitted to interact with the probe mols. Streptavidin-modified porous polyacrylamide hydrogel microelectrodes were prepared Biotinylated polyclonal antibodies to Escherichia coli were immobilized on the microelectrodes and the sensor was used to detect E. coli.

ST protein peptide sensor elec detection mol interaction; microelectrode immobilized antibody E coli detection

IT Voltammetry
(a.c.; protein and peptide sensors using elec. detection methods)

IT Transition metal complexes
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(as reporters for labeling target mols.; protein and peptide sensors using elec. detection methods)

IT Ceramics
Printed circuit boards
Textiles
(as support; protein and peptide sensors using elec. detection methods)

IT Glass, uses
Plastics, uses
Rubber, uses
RL: DEV (Device component use); USES (Uses)
(as support; protein and peptide sensors using elec. detection methods)

IT Analytical apparatus
(biochem.; protein and peptide sensors using elec. detection methods)

IT Antibodies
RL: RCT (Reactant); RACT (Reactant or reagent)
(biotinylated, immobilization on streptavidin-modified porous hydrogel microelectrodes; protein and peptide sensors using elec. detection methods)

IT Polymers, uses
RL: DEV (Device component use); USES (Uses)
(co-, films, linking probe with microelectrodes; protein and peptide sensors using elec. detection methods)

IT Plastics, uses
RL: DEV (Device component use); USES (Uses)
(conductive; protein and peptide sensors using elec. detection methods)

IT Polymers, uses
RL: DEV (Device component use); USES (Uses)
(**conjugated**, films, linking probe with microelectrodes; protein and peptide sensors using elec. detection methods)

IT Films
(copolymer, linking probe with microelectrodes; protein and peptide sensors using elec. detection methods)

IT Electrodes
(counter; protein and peptide sensors using elec. detection methods)

IT Bacteria (Eubacteria)

(detection of viable; protein and peptide sensors using elec. detection methods)

IT Immunoglobulins
 RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); DEV (Device component use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses) (fragments, immobilized; protein and peptide sensors using elec. detection methods)

IT Sols
 (gel linking probe with microelectrodes; protein and peptide sensors using elec. detection methods)

IT Voltammetry
 (hydrodynamic modulation; protein and peptide sensors using elec. detection methods)

IT Antiserums
 Combinatorial library
 Peptide library
 Phage display library
 (immobilized; protein and peptide sensors using elec. detection methods)

IT Antibodies
 Oligonucleotides
 Peptides, biological studies
 Probes (nucleic acid)
 Proteins, specific or class
 RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); DEV (Device component use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses) (immobilized; protein and peptide sensors using elec. detection methods)

IT Biosensors
 (immunosensors; protein and peptide sensors using elec. detection methods)

IT Natural products
 RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); DEV (Device component use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses) (library, immobilized; protein and peptide sensors using elec. detection methods)

IT Gels
 (linking probe with microelectrodes; protein and peptide sensors using elec. detection methods)

IT Polyoxyalkylenes, uses
 RL: DEV (Device component use); USES (Uses)
 (linking probe with microelectrodes; protein and peptide sensors using elec. detection methods)

IT Polymers, uses
 RL: DEV (Device component use); USES (Uses)
 (metal-containing; protein and peptide sensors using elec. detection methods)

IT Antibodies
 RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); DEV (Device component use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses) (monoclonal, immobilized; protein and peptide sensors using elec. detection methods)

IT Immobilization, biochemical
 (of probe interacting with protein or peptide target; protein and peptide sensors using elec. detection methods)

IT Metals, uses
 RL: DEV (Device component use); USES (Uses)
 (polymers impregnated with; protein and peptide sensors using elec. detection methods)

IT Hydrogels
 (porous, streptavidin-modified; protein and peptide sensors using elec. detection methods)

IT Amperometry
 Cyclic voltammetry
 Electric conductivity
 Electric conductors
 Electric current
 Electric impedance
 Electric insulators
 Electric potential
 Electrolytes
 Escherichia coli
 Holders
 Microelectrodes
 Molecular association
 Potentiometry
 Reference electrodes
 Sensors
 Square wave voltammetry
 (protein and peptide sensors using elec. detection methods)

IT Peptides, analysis
 Proteins, general, analysis
 RL: ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
 (protein and peptide sensors using elec. detection methods)

IT Carbides
 Nitrides
 Oxides (inorganic), uses
 RL: DEV (Device component use); USES (Uses)
 (protein and peptide sensors using elec. detection methods)

IT Voltammetry
 (pulsed; protein and peptide sensors using elec. detection methods)

IT Antibodies
 RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); DEV (Device component use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
 (single **chain**, Fv fragments, immobilized; protein and peptide sensors using elec. detection methods)

IT 9013-20-1, Streptavidin
 RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); DEV (Device component use); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent); USES (Uses)
 (as linking agent for immobilizing biotinylated probe mols.; protein and peptide sensors using elec. detection methods)

IT 7439-89-6D, Iron, complexes, uses 7439-95-4D, Magnesium, complexes, uses 7440-02-0D, Nickel, complexes, uses 7440-04-2D, Osmium, complexes, uses 7440-18-8D, Ruthenium, complexes, uses 7440-48-4D, Cobalt, complexes, uses 7440-50-8D, Copper, complexes, uses 7440-66-6D, Zinc, complexes, uses
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (as reporters for labeling target mols.; protein and peptide sensors using elec. detection methods)

IT 7440-21-3, Silicon, uses 12033-89-5, Silicon nitride, uses
 RL: DEV (Device component use); USES (Uses)
 (as support; protein and peptide sensors using elec. detection methods)

IT 9033-83-4, Polyphenylene 25013-01-8, Polypyridine 25067-54-3,
 Polyfuran **25233-30-1, Polyaniline** 25233-34-5,
 Polythiophene 30604-81-0, Polypyrrole 51555-21-6, Polycarbazole
 82451-55-6, Polyindole 95270-88-5, Polyfluorene 96638-49-2,
 Poly(phenylenevinylene)
 RL: DEV (Device component use); USES (Uses)
 (films, linking probe with microelectrodes; protein and peptide sensors
 using elec. detection methods)

IT 9003-05-8, Polyacrylamide 9004-34-6, Cellulose, uses 9012-36-6,
 Agarose
 RL: DEV (Device component use); USES (Uses)
 (gel linking probe with microelectrodes; protein and peptide sensors
 using elec. detection methods)

IT 25322-68-3, Polyethylene glycol
 RL: DEV (Device component use); USES (Uses)
 (linking probe with microelectrodes; protein and peptide sensors using
 elec. detection methods)

IT 109-97-7, Pyrrole
 RL: DEV (Device component use); USES (Uses)
 (neutral matrix, linking probe with microelectrodes; protein and
 peptide sensors using elec. detection methods)

IT 57-62-5D, Chlortetracycline, **conjugates** with target mols.
 60-54-8D, Tetracycline, **conjugates** with target mols. 65-61-2D,
 Acridine orange, **conjugates** with target mols. 90-45-9D,
 9-Aminoacridine, **conjugates** with target mols. 100-22-1D,
 N,N,N',N'-Tetramethyl-p-phenylenediamine, **conjugates** with target
 mols. 102-54-5D, Ferrocene, **conjugates** with target mols.
106-51-4D, 1,4-Benzoquinone, **conjugates** with target
 mols. 865-21-4D, Vinblastine, **conjugates** with target mols.
 1239-45-8D, Ethidium bromide, **conjugates** with target mols.
1518-16-7D, Tetracyanoquinodimethane, **conjugates** with
 target mols. 7059-24-7D, Chromomycin A3, **conjugates** with
 target mols. 7240-37-1D, 7-Aminoactinomycin D, **conjugates** with
 target mols. 10118-90-8D, Minocycline, **conjugates** with target
 mols. 11056-06-7D, Bleomycin, **conjugates** with iron and target
 mols. 13292-46-1D, Rifampicin, **conjugates** with target mols.
 18378-89-7D, Mithramycin A, **conjugates** with target mols.
 19052-39-2D, **conjugates** with target mols. 20830-81-3D,
 Daunomycin, **conjugates** with target mols. 23214-92-8D,
 Doxorubicin, **conjugates** with target mols. 23491-45-4D, Hoechst
 33258, **conjugates** with target mols. 23491-52-3D, Hoechst
 33342, **conjugates** with target mols. **31366-25-3D**,
 Tetrathiafulvalene, **conjugates** with target mols. 57576-44-0D,
 Aclarubicin, **conjugates** with target mols. 63783-82-4D,
 Ethidium monoazide, **conjugates** with target mols. 72496-41-4D,
 Pirarubicin, **conjugates** with target mols. 355395-37-8D,
conjugates with target mols.
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (protein and peptide sensors using elec. detection methods)

IT 58-85-5D, Biotin, **conjugates** with probe mols., complexes with
 immobilized streptavidin
 RL: ARG (Analytical reagent use); BPR (Biological process); BSU
 (Biological study, unclassified); DEV (Device component use); ANST
 (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
 (protein and peptide sensors using elec. detection methods)

IT 7429-90-5, Aluminum, uses 7440-06-4, Platinum, uses 7440-22-4, Silver,

uses 7440-32-6, Titanium, uses 7440-44-0, Carbon, uses 7440-47-3, Chromium, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses 7782-42-5, Graphite, uses 7783-90-6, Silver chloride, uses RL: DEV (Device component use); USES (Uses)

(protein and peptide sensors using elec. detection methods)

IT 7439-89-6D, Iron, **conjugates** with bleomycin and target mols., reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(protein and peptide sensors using elec. detection methods)

IT **25233-30-1, Polyaniline**

RL: DEV (Device component use); USES (Uses)

(films, linking probe with microelectrodes; protein and peptide sensors using elec. detection methods)

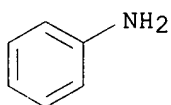
RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3

CMF C6 H7 N

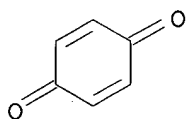


IT **106-51-4D, 1,4-Benzoquinone, conjugates** with target mols. **1518-16-7D, Tetracyanoquinodimethane, conjugates** with target mols. **31366-25-3D, Tetrathiafulvalene, conjugates** with target mols.

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses) (protein and peptide sensors using elec. detection methods)

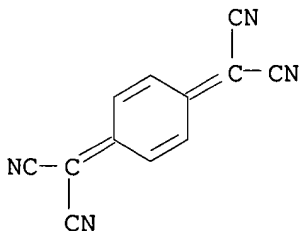
RN 106-51-4 HCAPLUS

CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)

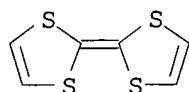


RN 1518-16-7 HCAPLUS

CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)



RN 31366-25-3 HCAPLUS
 CN 1,3-Dithiole, 2-(1,3-dithiol-2-ylidene)- (9CI) (CA INDEX NAME)



L104 ANSWER 11 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2000:812546 HCAPLUS
 DN 134:42816
 ED Entered STN: 20 Nov 2000
 TI Growth and characterization of **polyaniline** 7,7,8,8-tetracyanoquino-dimethane (TCNQ) complex films grown by vacuum evaporation
 AU Li, J. C.; Xue, Z. Q.; Zeng, Y.; Liu, W. M.; Wu, Q. D.; Song, Y. L.; Jiang, L.
 CS Department of Electronics, Peking University, Beijing, 100871, Peop. Rep. China
 SO Thin Solid Films (2000), 374(1), 59-63
 CODEN: THSFAP; ISSN: 0040-6090
 PB Elsevier Science S.A.
 DT Journal
 LA English
 CC 37-5 (Plastics Manufacture and Processing)
 Section cross-reference(s): 76
 AB High quality polycryst. **polyaniline**/7,7,8,8-tetracyanoquino-dimethane (PANI-TCNQ) complex thin films were grown by vacuum evaporation from powdered mixts. The structure of the PANI-TCNQ complexes was studied using scanning tunneling microscopy (TEM) and high resolution SEM. The films showed totally different optical and elec. properties from both of PANI and TCNQ films. Unusual two-dimensional aggregates were observed in the films. A charge transfer phenomenon, from the PANI **chains** to the TCNQ mols., was observed from the Fourier transfer IR spectrum.
 ST **polyaniline** tetracyanoquinodimethane complex prepn vacuum deposition; crystallinity vacuum evapd **polyaniline** TCNQ complex cond
 IT Charge transfer interaction
 Conducting polymers
 Crystallinity
 Electric conductivity
 Polymer **chains**
 Polymer morphology
 (morphol. and conductivity and optical properties of **polyaniline** 7,7,8,8-tetracyanoquinodimethane (TCNQ) complex grown by simultaneous vacuum evaporation)
 IT Charge transfer complexes
 Polyanilines
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
 (morphol. and conductivity and optical properties of **polyaniline** 7,7,8,8-tetracyanoquinodimethane (TCNQ) complex grown by simultaneous vacuum evaporation)
 IT Vapor deposition process
 (vacuum; morphol. and conductivity and optical properties of **polyaniline** 7,7,8,8-tetracyanoquinodimethane (TCNQ) complex grown by simultaneous vacuum evaporation)
 IT 1518-16-7 25233-30-1, **Polyaniline**

RL: PEP (Physical, engineering or chemical process); PRP (Properties);
PROC (Process)
(morphol. and conductivity and optical properties of **polyaniline**
7,7,8,8-tetracyanoquinodimethane (TCNQ) complex grown by simultaneous
vacuum evaporation)

RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

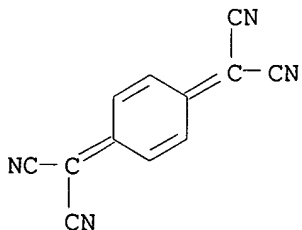
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IT 1518-16-7 25233-30-1, **Polyaniline**

RL: PEP (Physical, engineering or chemical process); PRP (Properties);
PROC (Process)
(morphol. and conductivity and optical properties of **polyaniline**
7,7,8,8-tetracyanoquinodimethane (TCNQ) complex grown by simultaneous
vacuum evaporation)

RN 1518-16-7 HCAPLUS

CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA
INDEX NAME)



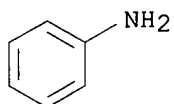
RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3

CMF C6 H7 N



L104 ANSWER 12 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1999:665442 HCAPLUS

DN 131:260021

ED Entered STN: 19 Oct 1999

TI Polymer batteries

IN Okada, Shinako; Nishiyama, Toshihiko; Harada, Manabu; Fujiwara, Masaki

PA NEC Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM H01M010-40

ICS H01M004-02; H01M004-60; H01M010-36

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11288740	A2	19991019	JP 1998-90174	19980402
PRAI	JP 1998-90174		19980402		

AB The batteries use cathodes containing reduced **polyaniline** or its derivative, reduced p-doped conducting polymer having a **conjugated** π bond system or its derivative, benzoquinone or its derivative, or a reduced form of a organic compds. or polymers capable of releasing or receiving electrons by an electrochem. redox reaction; and anodes composed of oxidized polypyridine, polypyridine or its derivative, oxidized n-doped conducting polymer having a **conjugated** π bond system or its derivative, anthraquinone or its derivative, or an oxidized form of a organic compds.

or polymers capable of releasing or receiving electrons by an electrochem. redox reaction; and are charged by constant current charging.

ST battery conducting polymer electrode

IT Polyanilines

RL: DEV (Device component use); USES (Uses)
(cathodes for secondary polymer batteries)

IT Secondary batteries

(electrodes for secondary polymer batteries)

IT 84-65-1, Anthraquinone 25013-01-8, Polypyridine

RL: DEV (Device component use); USES (Uses)
(anodes for secondary polymer batteries)

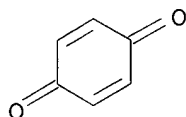
IT **106-51-4**, 2,5-Cyclohexadiene-1,4-dione, uses **25233-30-1**,
Polyaniline

RL: DEV (Device component use); USES (Uses)
(cathodes for secondary polymer batteries)

IT 104-15-4, p-Toluenesulfonic acid, uses 69444-47-9

RL: DEV (Device component use); USES (Uses)

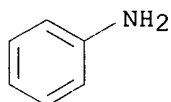
(electrolyte compns. for batteries with secondary polymer electrodes)
IT 106-51-4, 2,5-Cyclohexadiene-1,4-dione, uses 25233-30-1,
Polyaniline
RL: DEV (Device component use); USES (Uses)
(cathodes for secondary polymer batteries)
RN 106-51-4 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
CMF C6 H7 N



L104 ANSWER 13 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:279820 HCAPLUS
DN 130:284497
ED Entered STN: 06 May 1999
TI Polymer secondary battery with rapid charge and discharge
IN Okada, Shinako; Nishiyama, Toshihiko; Kurihara, Junko; Sakata, Koji;
Harada, Gaku
PA NEC Corporation, Japan; NEC Tokin Corporation
SO Eur. Pat. Appl., 20 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM H01M004-60
ICS H01M010-40; H01M004-02
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	EP 911893	A1	19990428	EP 1998-119869	19981020
	EP 911893	B1	20030305		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 11126610	A2	19990511	JP 1997-292598	19971024
	JP 3039484	B2	20000508		
PRAI	JP 1997-292598	A	19971024		
AB	A polymer battery is herein disclosed which comprises a pair of electrodes for carrying out the receipt and release of electrons in accordance with				

an oxidation-reduction reaction of a compound to take out an elec. energy, and an electrolyte, a solid electrolyte or a gel electrolyte, wherein as a compound constituting the electrodes, a π - **conjugated** polymer including a nitrogen atom and/or a quinone compound is used; as the electrolyte, the solid electrolyte or the gel electrolyte, a compound containing a proton is used; and the receipt and release of the electrons in accordance with the oxidation-reduction reaction of the compound are carried out only by the bonding and elimination of the proton bonded to or coordinated with the nitrogen atom or the proton of a produced hydroxyl group under the control of a proton concentration and a working voltage. The thus constituted polymer battery enables rapid charge and discharge and is excellent in cycle rapid charge and discharge.

ST polymer battery electrode electrolyte
IT Polymerization
(chemical; polymer secondary battery with rapid charge and discharge)

IT Polyoxyalkylenes, uses
RL: DEV (Device component use); USES (Uses)
(fluorine- and sulfo-containing, ionomers; polymer secondary battery with rapid charge and discharge)

IT Polyoxyalkylenes, uses
RL: DEV (Device component use); USES (Uses)
(fluorine-containing, sulfo-containing, ionomers; polymer secondary battery with rapid charge and discharge)

IT Battery electrodes
Battery electrolytes
Secondary batteries
(polymer secondary battery with rapid charge and discharge)

IT Fluoropolymers, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(polymer secondary battery with rapid charge and discharge)

IT Fluoropolymers, uses
Fluoropolymers, uses
RL: DEV (Device component use); USES (Uses)
(polyoxyalkylene-, sulfo-containing, ionomers; polymer secondary battery with rapid charge and discharge)

IT Ionomers
RL: DEV (Device component use); USES (Uses)
(polyoxyalkylenes, fluorine- and sulfo-containing; polymer secondary battery with rapid charge and discharge)

IT 26101-52-0, Polyvinylsulfonic acid
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(**polyaniline**-doped; polymer secondary battery with rapid charge and discharge)

IT 68-12-2, Dmf, uses 76-05-1, Trifluoroacetic acid, uses 84-65-1, Anthraquinone **106-51-4**, 2,5-Cyclohexadiene-1,4-dione, uses 108-32-7, Propylene carbonate 7440-44-0, Carbon, uses 12679-43-5, Naphthaquinone 25013-01-8, Polypyridine 30604-81-0, Polypyrrole 190201-51-5, Pyrimidine homopolymer
RL: DEV (Device component use); USES (Uses)
(polymer secondary battery with rapid charge and discharge)

IT **25233-30-1, Polyaniline**
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(polymer secondary battery with rapid charge and discharge)

IT 24937-79-9, Polyvinylidene fluoride
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(polymer secondary battery with rapid charge and discharge)

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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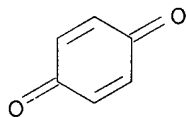
IT 106-51-4, 2,5-Cyclohexadiene-1,4-dione, uses

RL: DEV (Device component use); USES (Uses)

(polymer secondary battery with rapid charge and discharge)

RN 106-51-4 HCAPLUS

CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



IT 25233-30-1, Polyaniline

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(polymer secondary battery with rapid charge and discharge)

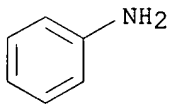
RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3

CMF C6 H7 N



L104 ANSWER 14 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1998:693672 HCAPLUS

DN 130:27248

ED Entered STN: 02 Nov 1998

TI Secondary batteries, proton-conducting polymer electrolytes, and electrode active mass

IN Takeuchi, Masataka; Ookubo, Takashi

PA Showa Denko K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM H01B001-12
 ICS C08F020-00; C08G018-06; C08G061-02; C08G073-00; C08L075-00;
 H01M004-02; H01M004-50; H01M004-60; H01M010-40
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 38, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10289617	A2	19981027	JP 1997-97435	19970415
PRAI	JP 1997-97435		19970415		

AB Claimed secondary batteries use proton-conducting polymer solid electrolytes. Claimed electrolytes contain protonic acids and are obtained from compds. having polymerizing functional group CH₂:C(R₁)CO₂ or CH₂C(R₂)CO(OR₃)xNHCO₂ (R₁, R₂ = H or alkyl; R₃ = C<10 divalent group; x = 0-10) by polymerization using heat and/or active light. Claimed electrodes use composites of active mass selected from polymers having sulfonic acid side **chains**, polymers containing polypyridine, polypyrimidine, and/or polyquinone in the backbone, or Mn oxides with the above polymer electrolytes. The batteries have high safety, reliability, large capacity, and long cycle life.

ST proton conducting polymer electrolyte battery safety; composite electrode polymer electrolyte; photopolymn proton conducting polymer electrolyte; urethane acrylic polyoxyalkylene electrolyte battery

IT Battery electrodes
 Battery electrolytes
 Conducting polymers
 Secondary batteries
 (batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT Polyamines
 Polyanilines
 RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
 (composites with polymer electrolytes, electrodes; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT Acids, uses
 Sulfonic acids, uses
 RL: DEV (Device component use); USES (Uses)
 (electrolytes containing; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT Urethanes
 RL: DEV (Device component use); USES (Uses)
 (electrolytes; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT Polyoxyalkylenes, uses
 Polyoxyalkylenes, uses
 RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
 (fluorine-containing, electrolytes; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT Polyoxyalkylenes, uses
 RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
 (fluorine-containing, perfluoro, acrylic, electrolytes; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT Safety
 (in manufacture of proton-conducting polymer electrolytes for batteries)

IT Polyoxyalkylenes, uses
 RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
 (perfluoro, perfluoro, acrylic, electrolytes; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT Ionic conductors
 (polymeric; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT Sulfonic acids, uses
 Sulfonic acids, uses
 RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
 (polymers, composites with polymer electrolytes, electrodes; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT Fluoropolymers, uses
 Fluoropolymers, uses
 RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
 (polyoxyalkylene-, electrolytes; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT Fluoropolymers, uses
 Fluoropolymers, uses
 RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
 (polyoxyalkylene-, perfluoro, acrylic, electrolytes; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT Polymers, uses
 Polymers, uses
 RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
 (sulfo-containing, composites with polymer electrolytes, electrodes; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT 25013-01-8, Polypyridine 71730-08-0
 RL: DEV (Device component use); USES (Uses)
 (composites with polymer electrolytes, electrodes; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT 7446-11-9DP, Sulfuric anhydride, reaction products with **polyaniline** 11129-60-5P, Manganese oxide **25233-30-1DP**, **Polyaniline**, sulfonated **25233-30-1P**, **Polyaniline** **26745-90-4P** 190201-51-5P, Pyrimidine homopolymer
 RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
 (composites with polymer electrolytes, electrodes; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

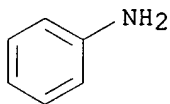
IT 104-15-4, uses 7664-38-2, Phosphoric acid, uses
 RL: DEV (Device component use); USES (Uses)
 (electrolytes containing; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT 202739-72-8P
 RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
 (electrolytes; batteries using proton-conducting polymer electrolytes and polymer composite electrodes)

IT 76287-91-7P 87260-75-1P 203391-79-1DP, reaction products with
polyoxyalkylenes, fluorine-containing
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation);
RACT (Reactant or reagent)
(preparation of; in manufacture of proton-conducting polymer electrolytes
for
batteries)
IT 30674-80-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, urethane compds. from; in manufacture of proton-conducting
polymer electrolytes for batteries)
IT 25791-96-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with methacryloyloxyethyl isocyanate; in manufacture of
proton-conducting polymer electrolytes for batteries)
IT 375-01-9, 2,2,3,3,4,4,4-Heptafluoro-1-butanol 37286-64-9,
Polyoxypropylene monomethyl ether 107852-51-7, Fomblin Z-DOL
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with methacryloyloxyethylisocyanate; in manufacture of
proton-conducting polymer electrolytes for batteries)
IT **25233-30-1DP, Polyaniline, sulfonated**
25233-30-1P, Polyaniline 26745-90-4P
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP
(Preparation); USES (Uses)
(composites with polymer electrolytes, electrodes; batteries using
proton-conducting polymer electrolytes and polymer composite
electrodes)
RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

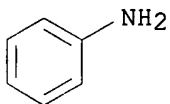
CRN 62-53-3
CMF C6 H7 N



RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
CMF C6 H7 N

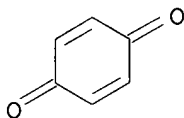


RN 26745-90-4 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 106-51-4

CMF C6 H4 O2



L104 ANSWER 15 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1998:373193 HCAPLUS

DN 129:68118

ED Entered STN: 19 Jun 1998

TI Heteroaromatic Chromophore Functionalized Epoxy-Based Nonlinear Optical Polymers

AU Wang, Xiaogong; Yang, Ke; Kumar, Jayant; Tripathy, Sukant K.; Chittibabu, Kethinni G.; Li, Lian; Lindsay, Geoffrey

CS Center for Advanced Materials Departments of Chemistry and Physics, University of Massachusetts, Lowell, MA, 01854, USA

SO Macromolecules (1998), 31(13), 4126-4134

CODEN: MAMOBX; ISSN: 0024-9297

PB American Chemical Society

DT Journal

LA English

CC 35-8 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 36, 73

AB A series of epoxy-based second-order nonlinear optical (NLO) polymers containing heteroarom. chromophores were designed. Precursor polymers were prepared from diglycidyl ether of Bisphenol A and aniline or 4-(2-thienyl)aniline. The precursor polymers were post-functionalized by an azo-coupling reaction and tricyanovinylolation to form a series of NLO polymers containing heteroarom. chromophores. The versatility of the post-modification strategy previously reported was extended to include various heteroarom. chromophores in the polymers at the final stage of synthesis. The correlation between different heteroarom. chromophore structure and NLO properties of the polymers was extensively studied. Polymers containing heteroarom. chromophores exhibit improved temporal stability and enhanced NLO activity. The d_{33} was 80 pm/V at 1.550 μm for a representative polymer of the class containing 2-(4-aminophenyl)-(5-tricyanovinyl)thiophene chromophores. The NLO properties of the poled polymers exhibit long-term stability at 80°.

ST epoxyaniline functionalization heteroarom chromophore NLO material; nonlinear optical property **polyaniline** epoxy chromophore

IT Polymer **chains**
(configuration; preparation and NLO properties of epoxy-**polyaniline** and epoxy-polythienylaniline functionalized with heteroarom. chromophores)

IT Polyamines
Polyamines

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(epoxy, aniline-based, heteroarom. chromophore functionalized; preparation and NLO properties of epoxy-**polyaniline** and epoxy-polythienylaniline functionalized with heteroarom. chromophores)

IT Electrooptical effect

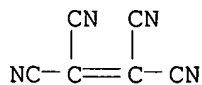
- (poling; preparation and NLO properties of epoxy-**polyaniline** and epoxy-polythienylaniline functionalized with heteroarom. chromophores)
- IT Epoxy resins, preparation
Epoxy resins, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polyamine-, aniline-based, heteroarom. chromophore functionalized; preparation and NLO properties of epoxy-**polyaniline** and epoxy-polythienylaniline functionalized with heteroarom. chromophores)
- IT Coupling reaction
Diazotization
Dipole moment
Electronic transition
Glass transition temperature
Nonlinear optical properties
Second-harmonic generation
Solubility
Structural phase transition
Substitution reaction, electrophilic
(preparation and NLO properties of epoxy-**polyaniline** and epoxy-polythienylaniline functionalized with heteroarom. chromophores)
- IT 504-24-5D, 4-Pyridinamine, reaction products with epoxy polyanilines
RL: PRP (Properties)
(preparation and NLO properties of epoxy-**polyaniline** and epoxy-polythienylaniline functionalized with heteroarom. chromophores)
- IT 121-66-4DP, 2-Amino-5-nitrothiazole, diazonium salts, reaction products with epoxy polyanilines **670-54-2DP**, Tetracyanoethylene, reaction products with epoxy poly(thienylaniline)s 6285-57-ODP, 2-Amino-6-nitrobenzothiazole, diazonium salts, reaction products with epoxy polyanilines 30974-11-9DP, Aniline-bisphenol a diglycidyl ether copolymer, reaction products with nitrothiazole and coumarin and cyanoethylene chromophores 39565-05-4DP, 2-Amino-5-(4-nitrophenylsulfonyl)thiazole, diazonium salts, reaction products with epoxy polyanilines 40953-34-2DP, 2-Amino-4,5-imidazoledicarbonitrile, diazonium salts, reaction products with epoxy polyanilines 53518-15-3DP, 7-Amino-4-(trifluoromethyl)coumarin, diazonium salts, reaction products with epoxy polyanilines 208933-69-1DP, Bisphenol A diglycidyl ether-4-(2-thienyl)aniline copolymer, reaction products with nitrothiazole and coumarin and cyanoethylene chromophores
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and NLO properties of epoxy-**polyaniline** and epoxy-polythienylaniline functionalized with heteroarom. chromophores)
- IT 7782-78-7, Nitrosylsulfuric acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation and NLO properties of epoxy-**polyaniline** and epoxy-polythienylaniline functionalized with heteroarom. chromophores)

RE.CNT 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD

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- IT 670-54-2DP, Tetracyanoethylene, reaction products with epoxy poly(thienylaniline)s
- RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (preparation and NLO properties of epoxy-**polyaniline** and epoxy-polythienylaniline functionalized with heteroarom. chromophores)
- RN 670-54-2 HCAPLUS
- CN Ethenetetracarbonitrile (6CI, 8CI, 9CI) (CA INDEX NAME)



L104 ANSWER 16 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1998:344579 HCAPLUS
 DN 129:25370
 ED Entered STN: 10 Jun 1998
 TI Dielectric, paramagnetic, or phosphorescent nanoparticles biosensor for competition assays
 IN Ewart, Thomas G.; Bogle, Gavin T.
 PA Noab Immunoassay Inc., Can.; Ewart, Thomas G.; Bogle, Gavin T.
 SO PCT Int. Appl., 86 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM G01N033-543
 ICS G01N033-58; G01N027-327; G01N027-22; G01N021-64; C12N007-00; C12Q001-68
 CC 9-1 (Biochemical Methods)
 Section cross-reference(s): 7, 15, 52
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9821587	A1	19980522	WO 1997-CA828	19971107
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
US 5922537	A	19990713	US 1996-746420	19961108
AU 9748597	A1	19980603	AU 1997-48597	19971107
PRAI US 1996-746420		19961108		
WO 1997-CA828		19971107		
AB Biosensor technol. based on the labeling entities having particle reporters provides cost competitive readily manufactured assay devices. Submicron particles of uniform dimension in metals, polymers, glasses, ceramics and biol. structures such as phages are used as the labeling entities. Such reporter particles greatly increase the sensitivity and accuracy, and provide a variety of assay techniques for determining analyte presence in a sample. The particles may have dielec., paramagnetic and/or phosphorescent properties; such particles are particularly useful in a variety of competition type assays. Novel phosphor and phage particles are provided for use as unique labeling entities. Goat anti-human IgG-alkaline phosphatase conjugate was treated with ZnS:Cu:Al phosphor microparticles and then with glutaraldehyde for crosslinking. The particles were added to wells covalently coated with serially diluted human IgG. The crosslinked goat anti-human IgG-alkaline phosphatase bound to the wells in proportion to the concentration of human IgG bound. Another example illustrates direct electron beam excitation of microparticle phosphors at ambient pressure.				
ST dielec nanoparticle biosensor competition assay; paramagnetic nanoparticle biosensor competition assay; phosphorescence nanoparticle biosensor competition assay				
IT Immunoglobulins RL: RCT (Reactant); RACT (Reactant or reagent) (G, conjugates , goat anti-human, with alkaline phosphatase;				

dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Phosphorimetry
(apparatus for; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Amines, biological studies
Amines, biological studies
RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(aryl, tertiary, polymers, hole transporter dopants; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Avidins
RL: RCT (Reactant); RACT (Reactant or reagent)
(**conjugates** with alkaline phosphatase; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Rare earth metals, biological studies
RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(cryptates, solid-phase semiconductor polymer dopants; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Biosensors
(diagnostic; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Capacitors
Electrodes
Immunoassay
Nucleic acid hybridization
Particles
(dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Gene
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)
(dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Analysis
(displacement competition assay; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Electric transport properties
(electron and hole transporters, solid-phase semiconductor polymer dopants; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Fullerenes
Polyoxadiazoles
RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(electron transporter dopants; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Polycyclic compounds
RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(fluorescent, solid-phase semiconductor polymer dopants; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for

competition assays)

IT Fluoropolymers, uses
 RL: DEV (Device component use); USES (Uses)
 (heat-shrink tubing, in phosphorescence microparticle sensors; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Gel electrophoresis
 Membranes, nonbiological
 (in nucleic acid sequencing or hybridization assay apparatus; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Semiconductor materials
 (inorg. nanocryst., solid-phase semiconductor polymer dopants; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Semiconductor devices
 (microchips; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Particles
 (paramagnetic; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Bacteriophage
 Electric insulators
 Phosphors
 (particles; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Analytical apparatus
 (phosphorescence; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Microparticles
 Nanoparticles
 (reporter; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Nucleic acids
 RL: PRP (Properties)
 (sequencing; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Polymers, biological studies
 RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
 (solid semiconductor phosphors; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Metalloporphyrins
 Rare earth complexes
 RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
 (solid-phase semiconductor polymer dopants; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Polythiophenylenes
 RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
 (solid-phase semiconductor polymer phosphor reporter label; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Dopants
 (solid-phase semiconductor polymer; dielec. and paramagnetic and or

phosphorescent nanoparticles biosensor for competition assays)

IT Dyes
(squarilium, solid-phase semiconductor polymer dopants; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT Pipes and Tubes
(stainless steel, in phosphorescence microparticle sensors; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT 9001-78-9DP, Alkaline phosphatase, **conjugates** with avidin or goat anti-human IgG and crosslinked with glutaraldehyde to cage phosphor microparticles
RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); CAT (Catalyst use); DEV (Device component use); PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT 111-30-8, Glutaraldehyde
RL: RCT (Reactant); RACT (Reactant or reagent)
(dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT 494-72-4, Diphenoquinone **1989-32-8** 7429-90-5D, Aluminum, quintolates, biological studies
RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(electron transporter dopants; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT 9002-84-0, Teflon
RL: DEV (Device component use); USES (Uses)
(heat-shrink tubing, in phosphorescence microparticle sensors; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT 1306-23-6, Cadmium sulfide (CdS), biological studies
RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(inorg. nanocryst. semiconductor dopants; Mn doped, dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT 1314-98-3, Zinc sulfide (ZnS), biological studies
RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(inorg. nanocryst. semiconductor dopants; Mn, Cu, Al, Ag and Tb doped, dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT 7440-27-9, Terbium, uses
RL: MOA (Modifier or additive use); USES (Uses)
(inorg. nanocryst. semiconductor dopants; dopant for Zinc sulfide, dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT 7440-53-1, Europium, uses
RL: MOA (Modifier or additive use); USES (Uses)
(phosphor microparticles; Y2O2S dopant, dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT 12340-04-4, Yttrium oxide sulfide (Y2O2S)

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)

(phosphor microparticles; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT 7429-90-5, Aluminum, uses 7440-50-8, Copper, uses

RL: MOA (Modifier or additive use); USES (Uses)

(phosphor microparticles; zinc sulfide dopant, dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT 132-65-0D, Dibenzothiophene, compds. 486-25-9D, Fluorenone, compds.

32283-92-4, N,N'-Bis(3-aminophenyl)-3,4,9,10-perylenetetracarboxylic diimide 76372-76-4, N,N'-Bis(2,6-dimethylphenyl)-3,4,9,10-perylenetetracarboxylic diimide 83054-80-2

RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)

(polycyclic organic fluorescent dopants; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT 198-55-0D, Perylene, compds. 289-74-7, Thiapyrylium 574-93-6D,

Phthalocyanine, compds. 1047-16-1D, Quinacridone, compds. 1254-43-9 23627-89-6D, Naphthalocyanine, compds.

RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)

(solid-phase semiconductor polymer dopants; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT 4499-83-6 25067-59-8, Poly(vinylcarbazole) 25190-62-9,

Poly(1,4-phenylene) 25233-30-1, Poly(aniline) 51325-05-4,

Poly(thienylene) 66280-99-7, Poly(thienylenevinylene) 76188-55-1,

Poly(methylphenylsilane) 96638-49-2, Poly(phenylenevinylene)

123863-98-9, Poly(9,9-dihexylfluorene) 146088-00-8,

Poly(methylphenylsilane) 197500-59-7

RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)

(solid-phase semiconductor polymer phosphor reporter label; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

IT 7439-96-5, Manganese, uses 7440-22-4, Silver, uses

RL: MOA (Modifier or additive use); USES (Uses)

(zinc sulfide dopant, dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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(3) The John Hopkins University Applied Physics Laboratory; US 4822566 A 1987

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(5) Wollongong Uniadvice Limited; WO 8911649 A 1989 HCAPLUS

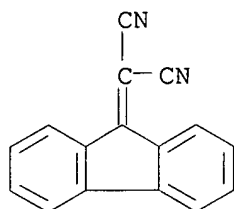
IT 1989-32-8

RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)

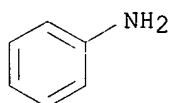
(electron transporter dopants; dielec. and paramagnetic and or phosphorescent nanoparticles biosensor for competition assays)

RN 1989-32-8 HCAPLUS

CN Propanedinitrile, 9H-fluoren-9-ylidene- (9CI) (CA INDEX NAME)



IT 25233-30-1, Poly(aniline)
 RL: ARG (Analytical reagent use); DEV (Device component use); THU
 (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES
 (Uses)
 (solid-phase semiconductor polymer phosphor reporter label; dielec. and
 paramagnetic and or phosphorescent nanoparticles biosensor for
 competition assays)
 RN 25233-30-1 HCAPLUS
 CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)
 CM 1
 CRN 62-53-3
 CMF C6 H7 N



L104 ANSWER 17 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1998:176598 HCAPLUS
 DN 128:210034
 ED Entered STN: 26 Mar 1998
 TI Electrochemical post self-assembly transformation of 4-aminothiophenol
 monolayers on gold electrodes
 AU Lukkari, Jukka; Kleemola, Kari; Meretoja, Minna; Ollonqvist, Tapio;
 Kankare, Jouko
 CS Department of Chemistry, University of Turku, Turku, FIN-20014, Finland
 SO Langmuir (1998), 14(7), 1705-1715
 CODEN: LANGD5; ISSN: 0743-7463
 PB American Chemical Society
 DT Journal
 LA English
 CC 72-2 (Electrochemistry)
 Section cross-reference(s): 22, 73
 AB Electrochem. oxidation of a self-assembled monolayer (SAM) of
 4-aminothiophenol on polycryst. gold electrodes leads to a complex
 voltammetric behavior characterized by an initial irreversible oxidation at
 .apprx.+0.77 V vs. SSCE (sodium SCE) and the formation of a pseudostable
 surface redox couple at +0.53 V. The oxidized form of this couple is
 hydrolyzed in acidic solns. to another redox pair with the formal redox
 potential of .apprx.+0.3 V. We show that the oxidation leads to a
 radical-radical coupling reaction between two adjacent aminothiophenol
 mols., yielding an electrode surface modified with 4'-mercapto-4-

aminodiphenylamine, the thiol derivative of a head-to-tail aniline dimer. The oxidized form of the dimer, quinone diimine, undergoes hydrolysis to the corresponding quinone monoimine and, eventually, to the original surface-bound 4-aminothiophenol and benzoquinone. The mechanism of the monolayer oxidation reaction has been elucidated by a variety of electrochem. and spectroelectrochem. techniques together with electrochem. data obtained with a soluble model compound, 4-(methylthio)aniline. In addition,

XPS

characterization of the 4-aminothiophenol (Au-SPhNH₂), the 2-(4'-mercaptophenylamino)benzoquinone (Au-SPhNH-BQ), and the oxidized 4-aminothiophenol SAMs is reported. The formation of an electrode surface modified with aniline dimers explains the beneficial effect that 4-aminothiophenol SAM exhibits in the electrochem. polymerization of aniline.

We

suggest that it favors the direct addition of aniline monomers to the oligomer **chains** on the surface, which results in a more ordered structure compared with the deposition of oligomers from the solution. This increased order is very important for the preparation of highly ordered **polyaniline** films for advanced applications in mol. electronics and sensor technol. The results also show that after the initial dimerization step, aniline polymerization can proceed through coupling of the neutral monomer to the oxidized oligomer.

ST aminothiophenol monolayer gold electrode; transformation electrochem post self assembly; oxidn electrochem mechanism methylthioaniline

IT Electrooptical effect

Electrooptical effect

Electrooptical effect

(UV-visible electrorereflection spectra; of Au-SPhNH₂ surface oxidized and partially transformed further in HClO₄)

IT Reflection spectra

Reflection spectra

Reflection spectra

(UV-visible electrorereflection; of Au-SPhNH₂ surface oxidized and partially transformed further in HClO₄)

IT Electrodes

(aminoquinone-modified electrodes prepared by immersing aminothiophenol-modified gold electrode in benzoquinone in acetonitrile/aqueous phosphate buffer)

IT Electric potential

(dependence of methylthioaniline oxidation peak potential on sweep rate)

IT Monolayers

(electrochem. post self-assembly transformation of aminothiophenol monolayers on gold electrodes)

IT Dimerization

(electrochem.; of methylthioaniline)

IT UV and visible spectra

UV and visible spectra

UV and visible spectra

(electrorereflection; of Au-SPhNH₂ surface oxidized and partially transformed further in HClO₄)

IT Oxidation, electrochemical

(of self-assembled monolayer of aminothiophenol on polycryst. gold electrodes)

IT 106-51-4, 1,4 Benzoquinone, uses

RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(aminoquinone-modified electrodes prepared by immersing aminothiophenol-modified gold electrode in benzoquinone in acetonitrile/aqueous phosphate buffer)

IT 7440-44-0, Carbon, uses
 RL: DEV (Device component use); USES (Uses)
 (cyclic voltammetry of methylthioaniline on glassy carbon electrode)

IT 104-96-1, 4-(Methylthio)aniline
 RL: PEP (Physical, engineering or chemical process); PRP (Properties);
 PROC (Process)
 (cyclic voltammetry on glassy carbon electrode)

IT 7601-90-3, Perchloric acid, uses
 RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical
 process); PROC (Process); USES (Uses)
 (electrochem. oxidation of self-assembled monolayer of aminothiophenol on
 polycryst. gold electrodes in solution containing)

IT 7440-57-5, Gold, uses
 RL: DEV (Device component use); USES (Uses)
 (electrochem. post self-assembly transformation of aminothiophenol
 monolayers on gold electrodes)

IT 1193-02-8, 4-Aminothiophenol
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (electrochem. post self-assembly transformation of aminothiophenol
 monolayers on gold electrodes)

RE.CNT 122 THERE ARE 122 CITED REFERENCES AVAILABLE FOR THIS RECORD

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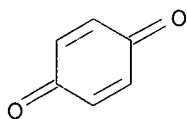
IT 106-51-4, 1,4 Benzoquinone, uses

RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical
process); PROC (Process); USES (Uses)

(aminoquinone-modified electrodes prepared by immersing
aminothiophenol-modified gold electrode in benzoquinone in
acetonitrile/aqueous phosphate buffer)

RN 106-51-4 HCAPLUS

CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



L104 ANSWER 18 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1996:580591 HCAPLUS

DN 125:276946

ED Entered STN: 30 Sep 1996

TI Synthesis of polyanilines and copolymers by melt condensation

IN Afzali-Ardakani, Ali; Gelorme, Jeffrey D.

PA International Business Machines Corporation, USA

SO U.S., 7 pp.

CODEN: USXXAM

DT Patent

LA English

IC ICM C08G012-00

NCL 528229000

CC 35-5 (Chemistry of Synthetic High Polymers)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5554717	A	19960910	US 1995-544902	19951018
PRAI	US 1995-544902		19951018		

AB Crystalline **polyaniline**, its derivs. and its copolymers with other **conjugated** monomers are synthesized by melt polycondensation of bifunctional starting materials having a quinone and N-protected amine group, and conversion of the polycondensation polymers to corresponding doped and conductive form of the polymers. N-tert-butyloxycarbonyl-phenylenediamine and benzoquinone were reacted to give N-tert-butyloxycarbonyl-indoaniline, which was polycondensed to give a low mol. weight end capped **polyaniline**.

ST butyloxycarbonyl indoaniline polymn **emeraldine**

IT Polyazomethines
RL: IMF (Industrial manufacture); PREP (Preparation)
(synthesis of polyanilines and copolymers by melt condensation)

IT Polymerization
(melt, synthesis of polyanilines and copolymers by melt condensation)

IT **25233-30-1P, Polyaniline**
RL: IMF (Industrial manufacture); PREP (Preparation)
(of **emeraldine** structure; synthesis of polyanilines and copolymers by melt condensation)

IT 55330-79-5P 178691-04-8P, N-tert-Butoxycarbonyl-indoaniline homopolymer
RL: IMF (Industrial manufacture); PREP (Preparation)
(synthesis of polyanilines and copolymers by melt condensation)

IT 178691-03-7P, N-tert-Butoxycarbonyl-indoaniline
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(synthesis of polyanilines and copolymers by melt condensation)

IT **106-51-4**, 2,5-Cyclohexadiene-1,4-dione, reactions 182704-19-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis of polyanilines and copolymers by melt condensation)

IT **25233-30-1P, Polyaniline**
RL: IMF (Industrial manufacture); PREP (Preparation)
(of **emeraldine** structure; synthesis of polyanilines and copolymers by melt condensation)

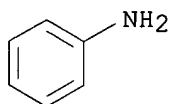
RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3

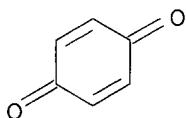
CMF C6 H7 N



IT **106-51-4**, 2,5-Cyclohexadiene-1,4-dione, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis of polyanilines and copolymers by melt condensation)

RN 106-51-4 HCAPLUS

CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



L104 ANSWER 19 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1995:996900 HCAPLUS
 DN 124:24884
 ED Entered STN: 22 Dec 1995
 TI Dehydrogenase and/or reductase coimmobilized in polymeric matrix with
 cofactor-polymeric spacer **conjugate**
 IN Ruedel, Ulrich; Gruendig, Bernd
 PA Institut fuer Chemo- und Biosensorik, Germany
 SO Ger., 6 pp.
 CODEN: GWXXAW
 DT Patent
 LA German
 IC ICM C12N011-08
 ICS C12N011-18
 CC 7-7 (Enzymes)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4419024	C1	19951019	DE 1994-4419024	19940531
PRAI	DE 1994-4419024		19940531		

AB A dehydrogenase and/or a reductase is coimmobilized in a polymeric matrix with its cofactor(s). The cofactor is attached to a polymeric spacer such as PEG, a polypeptide, or a polysaccharide. Relative to prior art methods, the described method provides improved enzymic stability and activity. The method finds use in preparation of enzyme electrodes and sensors. Thus, an aqueous solution of Moldola blue, PEG-NAD(H) **conjugate**, and alc. dehydrogenase was degassed with N. Pyrrole was added to the solution then Pt and Ag/AgCl electrodes were inserted into the solution Upon application of 700 mV for 1 min, a polymer layer was deposited on the Pt electrode. This was used as an enzyme electrode for detection of EtOH.

ST dehydrogenase reductase coimmobilization polymer cofactor **conjugate**

IT Polysaccharides, uses
 Proteins, uses
 RL: DEV (Device component use); USES (Uses)
 (**conjugates** with cofactors; dehydrogenase and/or reductase coimmobilized in polymeric matrix with cofactor-polymeric spacer **conjugate**)

IT Coenzymes
 RL: DEV (Device component use); USES (Uses)
 (**conjugates** with polymers; dehydrogenase and/or reductase coimmobilized in polymeric matrix with cofactor-polymeric spacer **conjugate**)

IT Sensors
 (dehydrogenase and/or reductase coimmobilized in polymeric matrix with cofactor-polymeric spacer **conjugate**)

IT Acrylic polymers, uses
 Urethane polymers, uses
 RL: DEV (Device component use); USES (Uses)
 (dehydrogenase and/or reductase coimmobilized in polymeric matrix with cofactor-polymeric spacer **conjugate**)

IT Electrodes
 (bio-, enzyme, dehydrogenase and/or reductase coimmobilized in
 polymeric matrix with cofactor-polymeric spacer **conjugate**)

IT Polymers, uses
 RL: DEV (Device component use); USES (Uses)
 (polysulfonates, dehydrogenase and/or reductase coimmobilized in
 polymeric matrix with cofactor-polymeric spacer **conjugate**)

IT Membranes
 (semipermeable, dehydrogenase and/or reductase coimmobilized in
 polymeric matrix with cofactor-polymeric spacer **conjugate**)

IT 53-57-6D, NADPH, **conjugates** with polymeric spacers 53-59-8D,
 NADP, **conjugates** with polymeric spacers 53-84-9D, NAD,
conjugates with polymeric spacers 58-68-4D, NADH,
conjugates with polymeric spacers 7057-57-0D, Meldola blue, PEG
conjugates 9002-89-5, Polyvinyl alcohol 9031-72-5, Alcohol
 dehydrogenase 9035-82-9, Dehydrogenase 9037-80-3, Reductase
25233-30-1, Polyaniline 25322-68-3D,
conjugates with cofactors 25667-98-5, Poly-o-phenylenediamine
 27073-41-2 30604-81-0, Polypyrrole 75788-67-9, Polyphenothiazine
 RL: DEV (Device component use); USES (Uses)
 (dehydrogenase and/or reductase coimmobilized in polymeric matrix with
 cofactor-polymeric spacer **conjugate**)

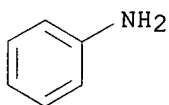
IT 92-82-0, Phenazine 92-84-2, Phenothiazine **106-51-4**, Quinone,
 uses 135-67-1, Phenoxazine
 RL: DEV (Device component use); USES (Uses)
 (redox mediator; dehydrogenase and/or reductase coimmobilized in
 polymeric matrix with cofactor-polymeric spacer **conjugate**)

IT **25233-30-1, Polyaniline**
 RL: DEV (Device component use); USES (Uses)
 (dehydrogenase and/or reductase coimmobilized in polymeric matrix with
 cofactor-polymeric spacer **conjugate**)

RN 25233-30-1 HCAPLUS
 CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

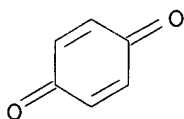
CM 1

CRN 62-53-3
 CMF C6 H7 N



IT **106-51-4, Quinone**, uses
 RL: DEV (Device component use); USES (Uses)
 (redox mediator; dehydrogenase and/or reductase coimmobilized in
 polymeric matrix with cofactor-polymeric spacer **conjugate**)

RN 106-51-4 HCAPLUS
 CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



L104 ANSWER 20 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1995:763587 HCAPLUS

DN 123:356876

ED Entered STN: 30 Aug 1995

TI Manufacture of solid electrolytes and solid electrolyte capacitors

IN Abe, Masao; Yoshii, Keisuke; Uetani, Yoshihiro; Ootani, Akira

PA Nitto Denko Corp, Japan

SO Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM H01G009-028

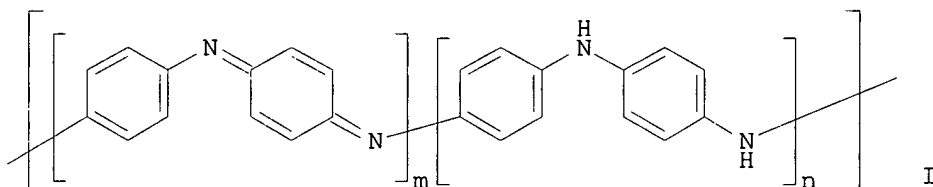
ICS C08G073-00; C08L001-08; C08L079-00

CC 76-10 (Electric Phenomena)

Section cross-reference(s): 38

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 07086093	A2	19950331	JP 1993-224751	19930909
PRAI	JP 1993-224751		19930909		
GI					



- AB The solid electrolytes for capacitors comprise dielec. oxide films and elec. conductive polymer films on the dielec. oxide films, which contain (a) a first polymer of organic solution soluble **polyaniline** having repeat unit of quinonediimine and phenyldiamine shown in I, (where m, n = mol. percentages of quinonediimine unit and phenyldiamine unit, $0 < m < 1$, $0 < n < 1$, $m+n = 1$), (b) a second polymer having ester or amide on its main **chain** or side **chain** in the repeat unit or a derivative of cellulose, and (c) proton acid of $pK_a < 4.8$.
- ST solid electrolyte capacitor elec conductive polymer; **polyaniline** quinonediimine phenyldiamine polyamide cellulose deriv
- IT Electric capacitors
Electrolytes
(manufacture of solid electrolytes and solid electrolyte capacitors)
- IT Rubber, synthetic
RL: TEM (Technical or engineered material use); USES (Uses)
(ethoxylated bisphenol A-ethylene glycol-isophthalic acid-neopentyl glycol-terephthalic acid, manufacture of solid electrolytes and solid electrolyte capacitors)
- IT 7429-90-5, Aluminum, uses
RL: DEV (Device component use); USES (Uses)
(manufacture of solid electrolytes and solid electrolyte capacitors)
- IT **106-51-4**, p-Benzoquinone, uses 110-04-3, 1-2-Ethane disulfonic acid 7440-25-7, Tantalum, uses 9003-20-7 9003-39-8, PVP 9004-36-8, CAB 551-0.01 9004-57-3 9004-58-4, EHEC high 9011-14-7 25038-59-9,

Elitel UE 3300 **25233-30-1D, Polyaniline**, oxidized
 26101-52-0 109191-29-9, Vylon RV-290 112754-95-7, CX 3000 (nylon)
 122783-91-9, Elitel UE 3500 164715-27-9, Fine Resin FR 301
 167396-79-4, Elitel UE 3203

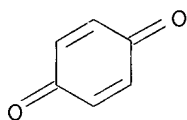
RL: TEM (Technical or engineered material use); USES (Uses)
 (manufacture of solid electrolytes and solid electrolyte capacitors)

IT **106-51-4, p-Benzoquinone**, uses **25233-30-1D, Polyaniline**, oxidized

RL: TEM (Technical or engineered material use); USES (Uses)
 (manufacture of solid electrolytes and solid electrolyte capacitors)

RN 106-51-4 HCAPLUS

CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



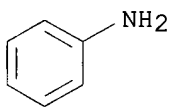
RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3

CMF C6 H7 N



L104 ANSWER 21 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1994:436490 HCAPLUS

DN 121:36490

ED Entered STN: 23 Jul 1994

TI Redox polymers and manufacture thereof

IN Yokomichi, Taisuke; Tada, Shinichi; Hirai, Yasumasa; Yo, Takeshi

PA Osaka Gas Co Ltd, Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08G073-04

ICS H01M004-60

CC 35-8 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 72

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06056989	A2	19940301	JP 1993-66068	19930301
PRAI	JP 1992-82651		19920303		

AB The title polymers useful for secondary battery electrode materials contain quinone groups directly bonded to hydrophilic polymer main or side chains. Polyethylenimine was treated with 2-chloro-1,4-

naphthoquinone in MeOH in 1:1 molar ratio, and the product dissolved in DMSO was coated on a Pt electrode and used as neg. electrode together with **polyaniline** pos. electrode and 0.1M sulfuric acid electrolyte to obtain a battery with electromotive force 1.0 V, charge-discharge c.d. 30 μ A, and Coulomb efficiency 95%.

ST polyethylenimine naphthoquinone redox battery electrode
 IT Polyamines
 RL: USES (Uses)
 (quinone group-containing, for battery electrodes)

IT Electrodes
 (battery, quinone group-containing polyethylenimine or polyallylamine for)

IT **1010-60-2P**, 2-Chloro-1,4-naphthoquinone
 RL: PREP (Preparation)
 (manufacture and reaction with polyethylenimine)

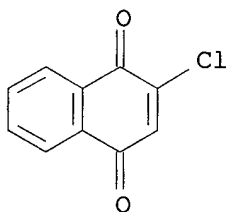
IT **84-58-2DP**, 2,3-Dichloro-5,6-dicyano-p-benzoquinone, reaction products with polyethylenimine **1010-60-2DP**, 2-Chloro-1,4-naphthoquinone, reaction products with polyethylenimine 9002-98-6DP, Polyethylenimine, reaction products with quinones 26913-06-4DP, Polyethylenimine, reaction products with quinones 30551-89-4DP, Polyallylamine, reaction products with naphthoquinone
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (manufacture of, for secondary battery electrodes)

IT 10026-13-8, Phosphorus pentachloride
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with naphthoquinonesulfonate)

IT 34169-62-5, Potassium 1,4-naphthoquinone-2-sulfonate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with phosphorus pentachloride)

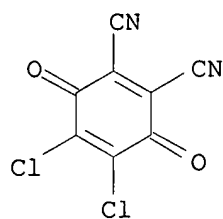
IT **1010-60-2P**, 2-Chloro-1,4-naphthoquinone
 RL: PREP (Preparation)
 (manufacture and reaction with polyethylenimine)

RN 1010-60-2 HCAPLUS
 CN 1,4-Naphthalenedione, 2-chloro- (9CI) (CA INDEX NAME)

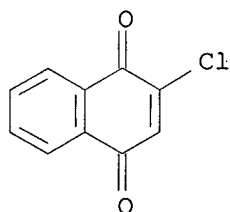


IT **84-58-2DP**, 2,3-Dichloro-5,6-dicyano-p-benzoquinone, reaction products with polyethylenimine **1010-60-2DP**, 2-Chloro-1,4-naphthoquinone, reaction products with polyethylenimine
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (manufacture of, for secondary battery electrodes)

RN 84-58-2 HCAPLUS
 CN 1,4-Cyclohexadiene-1,2-dicarbonitrile, 4,5-dichloro-3,6-dioxo- (6CI, 8CI, 9CI) (CA INDEX NAME)



RN 1010-60-2 HCAPLUS
 CN 1,4-Naphthalenedione, 2-chloro- (9CI) (CA INDEX NAME)



L104 ANSWER 22 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1994:218754 HCAPLUS
 DN 120:218754
 ED Entered STN: 30 Apr 1994
 TI Chemical and electrochemical syntheses, and characterization of
 poly(2,5-dimethoxyaniline) (PDMA): a novel, soluble, conducting polymer
 AU Storrier, Gregory D.; Colbran, Stephen B.; Hibbert, D. Brynn
 CS School of Chemistry, University of New South Wales, P.O. Box 1,
 Kensington, NSW, 2033, Australia
 SO Synthetic Metals (1994), 62(2), 179-86
 CODEN: SYMEDZ; ISSN: 0379-6779
 DT Journal
 LA English
 CC 35-7 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 36, 72
 AB Poly(2,5-dimethoxyaniline) (PDMA) is obtained either from chemical oxidation
 with ammonium peroxydisulfate or from electrooxidn. of the corresponding
 monomer in aqueous hydrochloric acid. UV-visible, ¹H NMR, and FT-IR
 spectroscopic data, and voltammetric studies are presented to demonstrate
 that the chemical and electrochem. prepared PDMA samples have essentially the
 same properties. The voltammetry of PDMA-coated electrodes is described.
 It is shown that the PDMA film efficiently catalyzes the proton-dependent
 benzoquinone-hydroquinone couple. Studies of the electropolymn. of PDMA
 from different aqueous acids reveal that the anion dets. the surface morphol.
 of the film deposited on the electrode. Preliminary results of the
 dependence of PDMA conductivity on pH are also presented.
 ST cyclic voltammetry platinum deposited polydimethoxyaniline; electrochem
 polymn dimethoxyaniline inorg acid; oxidative polymn dimethoxyaniline
 ammonium peroxydisulfate; **emeraldine** base polydimethoxyaniline
 synthesis spectra; elec cond doped polydimethoxyaniline pH; hydroquinone
 quinone redox couple polydimethoxyaniline
 IT Electric conductivity and conduction
 (of doped poly(dimethoxyaniline), pH effect on)

IT Electrodeposits and Electroplates
 (poly(dimethoxyaniline) films, preparation and elec. conductivity of)

IT Electrodes
 (poly(dimethoxyaniline)-coated platinum, for quinone-hydroquinone couple)

IT **Chains**, chemical
 (twisting of, in poly(dimethoxyaniline), UV and FTIR study of)

IT Polyamines
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (aromatic, poly(dimethoxyaniline), electrochem. and chemical preparation and characterization of)

IT Polymerization
 (electrochem., of dimethoxyaniline, effect of inorg. acid on)

IT Redox reaction
 (electrochem., of quinone-hydroquinone couple on electrode-deposited poly(dimethoxyaniline)-coated platinum)

IT Polymerization
 (oxidative, of dimethoxyaniline by ammonium peroxydisulfate)

IT 7601-90-3, Perchloric acid, uses 7647-01-0, Hydrochloric acid, uses 7664-93-9, Sulfuric acid, uses 7697-37-2, Nitric acid, uses 16872-11-0, Hydrogen tetrafluoroborate
 RL: USES (Uses)
 (dimethoxyaniline electrochem. polymerization in, film morphol. in relation to)

IT 7727-54-0, Ammonium peroxydisulfate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (dimethoxyaniline oxidative polymerization by)

IT 88374-66-7, Poly(2,5-dimethoxyaniline)
 RL: USES (Uses)
 (electrochem. and chemical preparation and characterization of)

IT 7440-06-4, Platinum, uses
 RL: USES (Uses)
 (electrodes, coated with poly(dimethoxyaniline), hydroquinone-quinone redox reaction on)

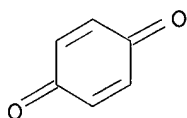
IT 123-31-9, Hydroquinone, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (oxidation of, on poly(dimethoxyaniline)-coated platinum)

IT **106-51-4**, Quinone, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reduction of, on poly(dimethoxyaniline)-coated platinum)

IT **106-51-4**, Quinone, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reduction of, on poly(dimethoxyaniline)-coated platinum)

RN 106-51-4 HCAPLUS

CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



L104 ANSWER 23 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1994:55503 HCAPLUS

DN 120:55503

ED Entered STN: 05 Feb 1994

TI ESR studies on polymers with particular electronic and magnetic properties

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

AU Roth, Hans Klaus; Krinichnyi, Viktor I.
 CS Dep. Nat. Sci., Leipzig Univ. Technol., Leipzig, D-O-7030, Germany
 SO Makromolekulare Chemie, Macromolecular Symposia (1993), 72(10th European Symposium on Polymer Spectroscopy, 1992), 143-59
 CODEN: MCMSES; ISSN: 0258-0322
 DT Journal
 LA English
 CC 36-5 (Physical Properties of Synthetic High Polymers)
 Section cross-reference(s): 76
 AB Measurements on insulating and conducting polymers from the **polyaniline** (I) family and investigations on semiconducting poly(tetrathiafulvalenes) (PTTF) are used for illustration and discussion of some methodical questions of ESR. This concerns especially the new possibilities of the recently developed high-resolution ESR in the 2-mm wave band. It is applied for the study of the nature and dynamics of paramagnetic centers (PC) and charge carriers in I and PTTF. The rate of the quasi-one-dimensional (1D) **intrachain** electron motion and of the three-dimensional (3D) **interchain** electron hopping is estimated sep. In iodine-doped PTTF the maximum elec. conductivity is 10^{-4} S cm⁻¹. It is almost identical with the 3D conductivity estimated by ESR and shows the typical temperature dependence of a semiconductor. The quasi-1D conductivity is several orders of magnitude higher and shows in its dependence on temperature similarities with a metal. The I samples show in the highly doped form a maximum conductivity of .apprx. 10 S·cm⁻¹ and relatively small differences between the 1D and 3D conductivity, supporting the model of metallic islands.
 ST ESR **polyaniline** polytetrathiafulvalene electronic property; elec cond **polyaniline** polytetrathiafulvalene ESR; magnetic property polytetrathiafulvalene ESR
 IT Polaron
 (in **polyaniline** and poly(tetrathiafulvalenes), elec. conductivity and magnetic properties in relation to)
 IT Electric conductors, polymeric
 (iodine-doped **polyaniline** and poly(tetrathiafulvalenes), ESR study of)
 IT Electric conductivity and conduction
 (of iodine-doped **polyaniline** and poly(tetrathiafulvalenes), structure in relation to)
 IT Electron spin resonance
 (of **polyaniline** and poly(tetrathiafulvalenes), elec. conductivity and magnetic properties in relation to)
 IT Polyamines
 RL: PRP (Properties)
 (aniline-based, elec. conductivity and magnetic properties of, ESR study of)
 IT Polaron
 (di-, in **polyaniline** and poly(tetrathiafulvalenes), elec. conductivity and magnetic properties in relation to)
 IT Polymers, properties
 RL: PRP (Properties)
 (tetrathiafulvalene group-containing, elec. conductivity and magnetic properties of, ESR study of)
 IT **68125-55-3 127030-61-9 127030-62-0**
 127583-97-5
 RL: PRP (Properties)
 (elec. conductivity and magnetic properties of, ESR study of)

IT 7553-56-2, Iodine, miscellaneous

RL: MSC (Miscellaneous)

(polyaniline and poly(tetrathiafulvalenes) doped with, elec. conductivity of)

IT 25233-30-1, Polyaniline

RL: PRP (Properties)

(with leucoemeraldine structure, elec. conductivity and magnetic properties of, ESR study of)

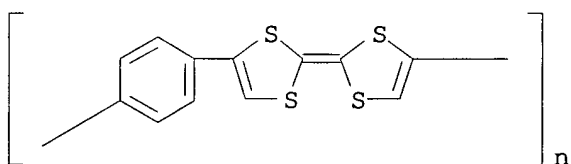
IT 68125-55-3 127030-61-9 127030-62-0

RL: PRP (Properties)

(elec. conductivity and magnetic properties of, ESR study of)

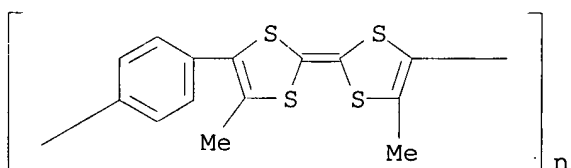
RN 68125-55-3 HCAPLUS

CN Poly(1,3-dithiol-4-yl-2-ylidene-1,3-dithiol-4-yl-2-ylidene-1,4-phenylene) (9CI) (CA INDEX NAME)



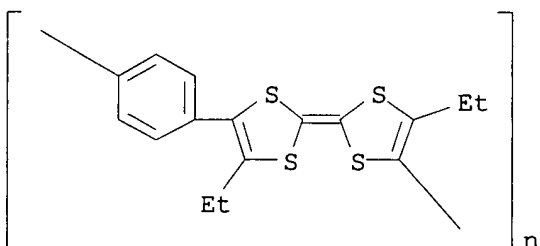
RN 127030-61-9 HCAPLUS

CN Poly[(5-methyl-1,3-dithiol-4-yl-2-ylidene)(5-methyl-1,3-dithiol-4-yl-2-ylidene)-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 127030-62-0 HCAPLUS

CN Poly[(5-ethyl-1,3-dithiol-4-yl-2-ylidene)(5-ethyl-1,3-dithiol-4-yl-2-ylidene)-1,4-phenylene] (9CI) (CA INDEX NAME)



IT 25233-30-1, Polyaniline

RL: PRP (Properties)

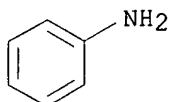
(with leucoemeraldine structure, elec. conductivity and magnetic properties of, ESR study of)

RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
CMF C6 H7 N



L104 ANSWER 24 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1993:571703 HCAPLUS

DN 119:171703

ED Entered STN: 16 Oct 1993

TI Polymer charge transfer complex

IN Oosawa, Toshuki; Yoshino, Katsumi

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM H01B001-12

ICS C08G061-12; C08G073-00; C08L065-00; C08L079-00

CC 76-2 (Electric Phenomena)

Section cross-reference(s): 37

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05047211	A2	19930226	JP 1991-333443	19911217
PRAI	JP 1991-73720		19910314		

AB The complex contains an intermol. charge transfer complex comprising an organic acceptor and an organic donor containing an elec. conductive polymer material with N in a main **chain**.

ST polymer charge transfer complex; elec conductive polymer complex nitrogen

IT Electric conductors, polymeric
(charge transfer complexes for)

IT **84-58-2D**, Dichlorodicyano-p-benzoquinone, complexes, with nitrogen-containing polymers **106-51-4D**, p-Benzoquinone, complexes, with nitrogen-containing polymers **1518-16-7D**, complexes, with nitrogen-containing polymers **25233-30-1D**, **Polyaniline**, quinone derivs. complexes 30604-81-0D, tetracyanoquinodimethane complexes

RL: USES (Uses)

(organic elec. conductor containing)

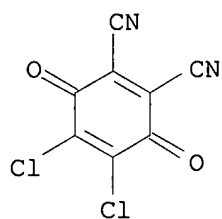
IT **84-58-2D**, Dichlorodicyano-p-benzoquinone, complexes, with nitrogen-containing polymers **106-51-4D**, p-Benzoquinone, complexes, with nitrogen-containing polymers **1518-16-7D**, complexes, with nitrogen-containing polymers **25233-30-1D**, **Polyaniline**, quinone derivs. complexes

RL: USES (Uses)

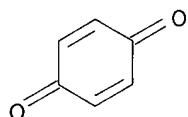
(organic elec. conductor containing)

RN 84-58-2 HCAPLUS

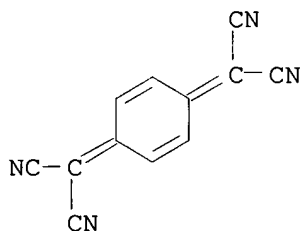
CN 1,4-Cyclohexadiene-1,2-dicarbonitrile, 4,5-dichloro-3,6-dioxo- (6CI, 8CI, 9CI) (CA INDEX NAME)



RN 106-51-4 HCAPLUS
 CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



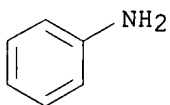
RN 1518-16-7 HCAPLUS
 CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)



RN 25233-30-1 HCAPLUS
 CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
 CMF C6 H7 N



L104 ANSWER 25 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1993:263541 HCAPLUS
 DN 118:263541
 ED Entered STN: 26 Jun 1993
 TI Electrochromic optical switching device
 IN Lampert, Carl M.; Visco, Steven J.
 PA University of California, USA

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

SO U.S., 9 pp.
 CODEN: USXXAM
 DT Patent
 LA English
 IC ICM G02F001-153
 NCL 359269000
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 29

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5142406	A	19920825	US 1990-606063	19901030
	US 5442478	A	19950815	US 1992-872830	19920423
PRAI	US 1990-606063		19901030		
AB	Electrochromic cells are described which comprise an electrochromic electrode coupled via an ion-transporting elec. insulating separator with a counter electrode formed from a reversibly polymerizable compound described by the general formula (RSy) _n in the charged state (y = 1-6; n = 2-1,000,000; and R = ≥1 of the same or different C1-20 aliphatic or aromatic organic moieties which may include ≥1 O, S, or N heteroatoms when R comprises ≥1 aromatic rings or ≥1 O, S, N, or F atoms associated with the chain when R comprises an aliphatic chain , aliphatic chains may be linear, branched, saturated or unsatd., and either aliphatic chains or aromatic rings may have substituents). Electrochromic devices employing the cells are also described.				
ST	organosulfur compd electrode electrochromic cell; reversible polymn electrode electrochromic cell				
IT	Electric contacts (for electrochromic devices, organosulfur compound-containing)				
IT	Optical imaging devices (electrochromic, with organosulfur compds. counter electrodes)				
IT	Ladder polymers RL: USES (Uses) (phenothiazines, electrochromic cells with electrochromic electrodes from, and organosulfur compound counter electrodes)				
IT	Polymers, uses RL: USES (Uses) (phosphazene group-containing, methoxyethoxy)ethoxy, electrochromic cells with separators from)				
IT	1072-71-5, 2,5-Dimercapto-1,3,4-thiadiazole RL: USES (Uses) (electrochromic cells with counter electrodes containing)				
IT	61-73-4, Methylene blue 84-47-9, 2-tert-Butylanthraquinone 84-65-1, Anthraquinone 95-53-4, properties 110-86-1, Pyridine, properties 119-93-7, 4,4'-Diamino-3,3'-dimethylbiphenyl 12030-48-7, Iridium monoxide 12030-49-8, Iridium dioxide 12036-35-0, Rhodium oxide (Rh2O3) 12054-48-7, Nickel hydroxide (Ni(OH)2) 12137-18-7, Rhodium monoxide 13463-67-7, Titanium dioxide, uses 13601-18-8D, solid solution with ferric ferrocyanide 14038-43-8, Ferric ferrocyanide (Fe4(Fe(CN)6)-3) 14038-43-8D, solid solution with lithium ferrocyanide 15546-75-5, 5,10-Dihydro-5,10-dimethylphenazine 18933-05-6, Manganese hydroxide (Mn(OH)2) 25233-30-1, Polyaniline 25233-34-5, Polythiophene 31366-25-3, Tetrathiafulvalene 36118-45-3, Pyrazoline 36490-78-5 46040-54-4 54968-01-3, Iridium hydroxide (Ir(OH)3) 56321-86-9, Ruthenium hydroxide 59458-40-1, Gold tungsten oxide 79079-35-9 101178-33-0 116066-80-9, Osmium hydroxide 142448-10-0, Rhodium hydroxide 147657-45-2, Platinum tungsten oxide RL: USES (Uses)				

(electrochromic cells with electrochromic electrodes from, and organosulfur compound counter electrodes)

IT 1304-76-3, Bismuth oxide (Bi₂O₃), properties 1307-96-6, Cobalt monoxide, properties 1308-38-9, Chromium oxide (Cr₂O₃), properties 1309-60-0, Lead dioxide 1313-27-5, Molybdenum trioxide, properties 1313-96-8, Niobium oxide (Nb₂O₅) 1313-99-1, Nickel monoxide, properties 1314-35-8, Tungsten trioxide, properties 1314-62-1, Vanadium oxide (V₂O₅), properties 1317-36-8, Lead monoxide, properties 1317-38-0, Copper oxide (CuO), properties 1343-93-7 1344-43-0, Manganese monoxide, properties 1344-54-3, Titanium oxide (TiO₃) 6159-05-3
 RL: PRP (Properties)

(electrochromic cells with electrochromic electrodes from, and organosulfur compound counter electrodes)

IT 7440-74-6, Indium, uses
 RL: USES (Uses)

(electrochromic cells with electrodes based on zinc monoxide doped with, and organosulfur compds. counter electrodes)

IT 18282-10-5, Tin dioxide
 RL: USES (Uses)

(electrochromic cells with electrodes based on, and organosulfur counter electrodes)

IT 7440-36-0, Antimony, uses 7782-41-4, Fluorine, uses
 RL: USES (Uses)

(electrochromic cells with electrodes from tin oxide doped with, and organosulfur compound counter electrodes)

IT 1312-43-2, Indium oxide (In₂O₃) 7429-90-5, Aluminum, uses 7440-02-0, Nickel, uses 7440-16-6, Rhodium, uses 7440-22-4, Silver, uses 7440-32-6, Titanium, uses 7440-47-3, Chromium, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses 12014-13-0, Cadmium tin oxide (CdSnO₃) 12185-56-7, Cadmium stannate (Cd₂SnO₄) 12597-68-1, Stainless steel, properties 12597-71-6, Brass, uses 22205-45-4, Copper sulfide (Cu₂S) 25583-20-4, Titanium mononitride 37271-26-4, Titanium oxynitride
 RL: USES (Uses)

(electrochromic cells with electrodes from, and organosulfur compound counter electrode)

IT 1306-19-0, Cadmium monoxide, properties 1314-13-2, Zinc monoxide, properties
 RL: PRP (Properties)

(electrochromic cells with electrodes from, and organosulfur compound counter electrode)

IT 1314-61-0, Tantalum oxide (Ta₂O₅) 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 7783-40-6, Magnesium difluoride 9002-89-5, Polyvinyl alcohol 20281-00-9, Cesium oxide (Cs₂O) 25322-68-3 25322-69-4, Polypropylene glycol 113443-18-8, Silicon monoxide
 RL: USES (Uses)

(electrochromic cells with separators from)

IT 33454-82-9, Lithium triflate
 RL: USES (Uses)

(electrochromic devices with layers containing, with organosulfur compound counter electrodes)

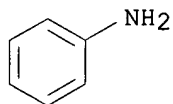
IT **25233-30-1, Polyaniline 31366-25-3,**
 Tetrathiafulvalene
 RL: USES (Uses)

(electrochromic cells with electrochromic electrodes from, and organosulfur compound counter electrodes)

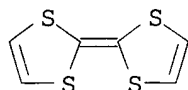
RN 25233-30-1 HCAPLUS
 CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
CMF C6 H7 N



RN 31366-25-3 HCAPLUS
CN 1,3-Dithiole, 2-(1,3-dithiol-2-ylidene)- (9CI) (CA INDEX NAME)



L104 ANSWER 26 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1992:592468 HCAPLUS
DN 117:192468
ED Entered STN: 15 Nov 1992
TI New **polyaniline** derivatives: poly(4,4'-diphenylamine methylenes) and poly(4,4'-diphenylimine methines)
AU Chen, Wen Chang; Jenekhe, Samson A.
CS Dep. Chem. Eng., Univ. Rochester, Rochester, NY, 14627-0166, USA
SO Macromolecules (1992), 25(22), 5919-26
CODEN: MAMOBX; ISSN: 0024-9297
DT Journal
LA English
CC 35-5 (Chemistry of Synthetic High Polymers)
AB New **polyaniline** derivs. consisting of alternating p-phenylene rings and N and C atoms in the backbone are prepared and characterized as model systems for the study of the role of the N atom on the structure and electronic and optical properties of polyanilines. The new polymers, poly(4,4'-diphenylamine methylenes) and poly(4,4'-diphenylimine methines), are analogs of and isoelectronic with leucoemeraldine and pernigraniline oxidation states of **polyaniline**, resp. The substitution of an amine N atom of polyleucoemeraldine with a methylene C atom results in an increase of the π - π^* optical band gap. The substitution of an imine N atom of polypernigraniline with a methine C atom results in a significant reduction of the oscillator strength of the π - π^* absorption band near 2.2 eV. This optical band gap in the electronic spectra of the poly(4,4'-diphenylimine methines) varies from 540 nm (2.3 eV) to 687 nm (1.8 eV) depending on the side-group substitution at the methine C atom. One of the poly(4,4'-diphenylimine methines) exhibits a very dramatic solvatochromism: it is red in DMF or NMP ($\lambda_{\text{max}} = 488$ nm) and dark blue in THF ($\lambda_{\text{max}} = 639$ nm). The solvatochromism of these **polyaniline** derivs. is explained by conformational changes due to solvent quality. The new **polyaniline** derivs. are promising model systems for the exptl. and theor. understanding of the electronic structure and phys. properties of polyanilines and other ring-containing **conjugated** polymers.
ST structure optical property polydiphenylaminemethylene
polydiphenylimidemethine; solvatochromism optical band gap polyamine
IT Polymerization

(of diphenylamine with aldehydes)

IT Dehydrogenation
(of poly(diphenylamine methylenes), by DDQ)

IT Solvatochromism
(of **polyaniline** derivs., structure effect on)

IT Polyamines
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and optical properties of, with **polyaniline**-like structure)

IT **Chains**, chemical
(structure and conformation of, of **polyaniline** derivs., optical properties in relation to)

IT Energy level, band structure
(gap, of **polyaniline** derivs., structure effect on)

IT **84-58-2**, 2,3-Dichloro-5,6-dicyano-1,4-benzoquinone
RL: USES (Uses)
(dehydrogenation of poly(diphenylamine methylenes) by)

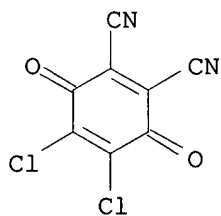
IT 1333-74-0
RL: USES (Uses)
(dehydrogenation, of poly(diphenylamine methylenes), by DDQ)

IT 120515-37-9DP, dehydrogenated 120515-37-9P 143330-75-0DP, dehydrogenated 143330-75-0P 143330-76-1DP, dehydrogenated 143330-76-1P 143330-77-2DP, dehydrogenated 143330-77-2P 143330-81-8DP, dehydrogenated 143330-81-8P 143330-82-9DP, dehydrogenated 143330-82-9P 143330-83-0DP, dehydrogenated 143330-83-0P 143330-84-1DP, dehydrogenated 143330-84-1P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and optical properties of)

IT **84-58-2**, 2,3-Dichloro-5,6-dicyano-1,4-benzoquinone
RL: USES (Uses)
(dehydrogenation of poly(diphenylamine methylenes) by)

RN 84-58-2 HCAPLUS

CN 1,4-Cyclohexadiene-1,2-dicarbonitrile, 4,5-dichloro-3,6-dioxo- (6CI, 8CI, 9CI) (CA INDEX NAME)



L104 ANSWER 27 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1991:450656 HCAPLUS

DN 115:50656

ED Entered STN: 10 Aug 1991

TI X-ray photoelectron spectroscopy studies of deprotonated polypyrrole and its complexes

AU Kang, E. T.; Neoh, K. G.; Ong, Y. K.; Tan, K. L.; Tan, B. T. G.

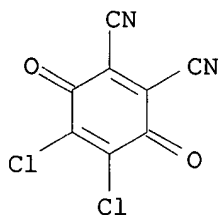
CS Dep. Chem. Eng., Natl. Univ. Singapore, Singapore, 0511, Singapore

SO Polymer (1991), 32(8), 1354-60
CODEN: POLMAG; ISSN: 0032-3861

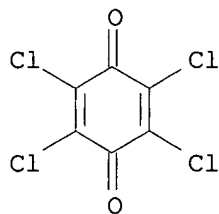
DT Journal

LA English

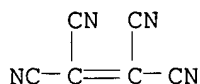
- CC 36-2 (Physical Properties of Synthetic High Polymers)
- AB Oxidized polypyrrole (I) was subjected to deprotonation by 0.5 M NaOH, and the interactions of the deprotonated pyrrolylium N with various protonic acids and organic electron acceptors were studied by XPS. XPS data showed similar spectra to those observed for the imine N in the **emeraldine** oxidation state of **polyaniline**. However, the cyclic acid/base treatments of the deprotonated I were not completely reversible. The interactions with the halobenzoquinones, such as o-, p-chloranil and o-bromanil, resulted in the formation of pos. charged N and the halogen and benzoquinone anions. The charge transfer behavior of the deprotonated pyrrolylium N towards acid protonation, and doping by the organic acceptors, together with the charge neutrality considerations, suggested the presence of localized unit pos. charge on the pyrrolylium nitrogens.
- ST deprotonated polypyrrole acid complex XPS
- IT Acids, compounds
RL: PRP (Properties)
(oxidized polypyrrole complexes, XPS study of, structure in relation to)
- IT **Chains**, chemical
(structure of, of oxidized polypyrrole and its complexes with protonic acids, XPS spectra in relation to)
- IT **84-58-2D**, DDQ, oxidized polypyrrole complexes **118-75-2D**, p-Chloranil, oxidized polypyrrole complexes **670-54-2D**, TCNE, oxidized polypyrrole complexes 2435-53-2D, o-Chloranil, oxidized polypyrrole complexes 2435-54-3D, o-Bromanil, oxidized polypyrrole complexes 7553-56-2D, Iodine, polypyrrole complexes 7647-01-0D, Hydrochloric acid, oxidized polypyrrole complexes 7664-93-9D, Sulfuric acid, oxidized polypyrrole complexes 10035-10-6D, Hydrobromic acid, oxidized polypyrrole complexes 30604-81-0D, Polypyrrole, oxidized, complexes with protonic acids
RL: PROC (Process)
(XPS study of, structure in relation to)
- IT **84-58-2D**, DDQ, oxidized polypyrrole complexes **118-75-2D**, p-Chloranil, oxidized polypyrrole complexes **670-54-2D**, TCNE, oxidized polypyrrole complexes
RL: PROC (Process)
(XPS study of, structure in relation to)
- RN 84-58-2 HCAPLUS
- CN 1,4-Cyclohexadiene-1,2-dicarbonitrile, 4,5-dichloro-3,6-dioxo- (6CI, 8CI, 9CI) (CA INDEX NAME)



- RN 118-75-2 HCAPLUS
- CN 2,5-Cyclohexadiene-1,4-dione, 2,3,5,6-tetrachloro- (9CI) (CA INDEX NAME)



RN 670-54-2 HCAPLUS
 CN Ethenetetracarbonitrile (6CI, 8CI, 9CI) (CA INDEX NAME)



L104 ANSWER 28 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1991:139385 HCAPLUS
 DN 114:139385
 ED Entered STN: 19 Apr 1991
 TI Surface functionalized and derivatized conducting polymers and their use
 in biosensors
 IN Guiseppi-Elie, Anthony
 PA Allage Associates, Inc., USA
 SO PCT Int. Appl., 48 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC C08F008-00; C08G085-00
 CC 9-2 (Biochemical Methods)
 Section cross-reference(s): 38

FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9010655	A2	19900920	WO 1990-US1411	19900313
	WO 9010655	A3	19901018		
	W: CA, JP				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, IT, LU, NL, SE				
	CA 2048692	AA	19900914	CA 1990-2048692	19900313
PRAI	US 1989-322670		19890313		

AB Electroactive or optoactive polymeric substrates are surface-modified and **conjugated** with an indicator reagent. The **conjugate** can be used as a sensor for detection of analytes. A film of an aniline-3-amino-4-methylbenzoic acid copolymer was created on the surface of an interdigitated microelectrode array by oxidative electrosynthesis. Amino groups were introduced into the surface film by reaction with 1:1 H₂SO₄:NH₃ followed by reduction with aqueous SnCl₂. Reaction with p-benzoquinone produced an activated film surface to which glucose oxidase was covalently attached. Using a spectrometer at 460 nm, the unmodified film had an activity of 0.8 mV/cm² while the modified film had an activity of 75 mV/cm².
 ST electroactive polymer indication **conjugate** sensor; optoactive polymer indicator **conjugate** sensor; sensor **polyaniline**

glucose oxidase **conjugate**; polymer electroactive optoactive
biomol **conjugate**

IT Biosensors
(biomols. **conjugated** with electro- or optoactive polymers
for)

IT Antibodies
Antigens
Hormones
RL: ANST (Analytical study)
(**conjugates** with electro- or optoactive polymers, sensors
containing, for analyte determination)

IT Polymers, biological studies
RL: BIOL (Biological study)
(electro- or optoactive, biomols. covalently coupled to, sensors
containing)

IT Polyamines
RL: ANST (Analytical study)
(aromatic, surface-activated, **conjugates** with biomols., sensors
containing, analyte determination in relation to)

IT Coenzymes
Deoxyribonucleic acids
Enzymes
Ribonucleic acids
RL: ANST (Analytical study)
(**conjugates**, with electro- or optoactive polymers, sensors
containing for analyte determination)

IT 132827-60-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(electrosynthesis of, an interdigitated microelectrode assay, in manufacture
of glucose oxidase-containing sensor)

IT **106-51-4**, 2,5-Cyclohexadiene-1,4-dione, biological studies
111-30-8, Glutaraldehyde 151-51-9, Carbodiimide
RL: ANST (Analytical study)
(linker, in preparation of electro- or optoactive polymer-biomol.
conjugates for biosensors)

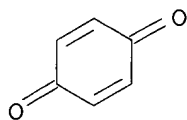
IT 9001-37-0D, Glucose oxidase, **conjugate** with **polyaniline**
RL: USES (Uses)
(sensor containing)

IT 25067-58-7D, Polyacetylene, surface-activated, **conjugates** with
biomols. **25233-30-1D, Polyaniline**, surface-activated,
conjugates with biomols. 25233-34-5D, Polythiophene,
surface-activated, **conjugates** with biomols. 30604-81-0D,
Polypyrrole, surface-activated, **conjugates** with biomols.
RL: ANST (Analytical study)
(sensors containing, for analyte determination)

IT 146-14-5D, FAD, **conjugate**
RL: ANST (Analytical study)
(with **polyaniline** film on interdigitated microelectrode
assay)

IT **106-51-4**, 2,5-Cyclohexadiene-1,4-dione, biological studies
RL: ANST (Analytical study)
(linker, in preparation of electro- or optoactive polymer-biomol.
conjugates for biosensors)

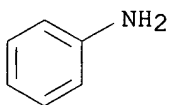
RN 106-51-4 HCAPLUS
CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



IT 25233-30-1D, **Polyaniline**, surface-activated,
conjugates with biomols.
 RL: ANST (Analytical study)
 (sensors containing, for analyte determination)
 RN 25233-30-1 HCAPLUS
 CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

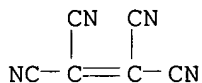
CM 1

CRN 62-53-3
 CMF C6 H7 N

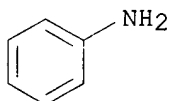


L104 ANSWER 29 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1990:140237 HCAPLUS
 DN 112:140237
 ED Entered STN: 13 Apr 1990
 TI Synthesis and characterization of electrically conducting
polyaniline-TCNE complexes
 AU Neoh, K. G.; Kang, E. T.; Khor, S. H.; Tan, K. L.
 CS Dep. Chem. Eng., Natl. Univ. Singapore, Singapore, 0511, Singapore
 SO Journal of Polymer Science, Part A: Polymer Chemistry (1989), 27(13),
 4365-74
 CODEN: JPACEC; ISSN: 0887-624X
 DT Journal
 LA English
 CC 36-5 (Physical Properties of Synthetic High Polymers)
 Section cross-reference(s): 35, 76
 AB **Polyaniline** (I)-tetracyanoethylene (TCNE) complexes can be
 synthesized either from **emeraldine** base or **emeraldine**
 HCl by a relatively simple method. The complexes demonstrate greater
 stability than the **emeraldine** HCl at elevated temps. and under
 high current densities. The elec. conductivity of the complexes synthesized
 from **emeraldine** base can be varied from $<10^{-6}$ to 0.2 S/cm by varying
 the amount of TCNE incorporated. The complexes synthesized from
emeraldine hydrochloride are slightly more conductive than the
 starting **emeraldine** HCl. In both types of complexes, it appears
 that electron transfer between I and TCNE has occurred resulting in the
 formation of some pos. charged I N and TCNE anions.
 ST **polyaniline** tetracyanoethylene complex elec cond
 IT Electric conductivity and conduction
 (of **polyaniline**-tetracyanoethylene complexes, prepared from
emeraldine base and **emeraldine** hydrochloride,
 structure and thermal stability in relation to)

IT **Chains**, chemical
 (structure of, of **polyaniline**-tetracyanoethylene complexes,
 prepared from **emeraldine** base and **emeraldine**
 hydrochloride, elec. conductivity in relation to)
 IT **670-54-2DP**, Tetracyanoethylene, complexes with **polyaniline**
25233-30-1DP, **Polyaniline**, tetracyanoethylene complexes
 RL: PRP (Properties); PREP (Preparation)
 (elec. conductivity of, prepared from **emeraldine** base and
emeraldine hydrochloride, structure and thermal stability in
 relation to)
 IT **670-54-2DP**, Tetracyanoethylene, complexes with **polyaniline**
25233-30-1DP, **Polyaniline**, tetracyanoethylene complexes
 RL: PRP (Properties); PREP (Preparation)
 (elec. conductivity of, prepared from **emeraldine** base and
emeraldine hydrochloride, structure and thermal stability in
 relation to)
 RN 670-54-2 HCAPLUS
 CN Ethenetetracarbonitrile (6CI, 8CI, 9CI) (CA INDEX NAME)



RN 25233-30-1 HCAPLUS
 CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)
 CM 1
 CRN 62-53-3
 CMF C6 H7 N



L104 ANSWER 30 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1989:408077 HCAPLUS
 DN 111:8077
 ED Entered STN: 08 Jul 1989
 TI **Polyaniline**: doping, structure and derivatives
 AU Ray, A.; Asturias, G. E.; Kershner, D. L.; Richter, A. F.; MacDiarmid, A.
 G.; Epstein, A. J.
 CS Dep. Chem., Univ. Pennsylvania, Philadelphia, PA, 19104-6323, USA
 SO Synthetic Metals (1989), 29(1), E141-E150
 CODEN: SYMEDZ; ISSN: 0379-6779
 DT Journal
 LA English
 CC 36-2 (Physical Properties of Synthetic High Polymers)
 Section cross-reference(s): 76
 AB Redox titration results and electronic spectral evidence show that the
 oxidation
 state of the **emeraldine** base form of **polyaniline** (I)
 can vary depending on whether its synthesis is performed in the presence

or absence of air. Chemical doping of leucoemeraldine, the completely reduced form of I, to selected oxidation states can be accomplished by a variety of oxidizing agents such as Cl₂, NOPF₆, FeCl₃, SnCl₄, and TCNQ.

ST **polyaniline** doping structure oxidn state

IT Electric conductivity and conduction
(four-probe, of doped **polyaniline**, effect of oxidation state on)

IT **Chains**, chemical
(structure of, of **polyaniline**, during doping and oxidation)

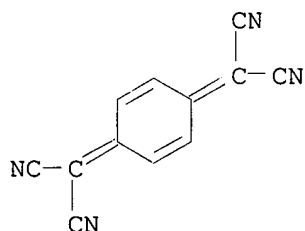
IT **1518-16-7**, TCNQ 7646-78-8, Tin chloride (SnCl₄), uses and miscellaneous 7705-08-0, Iron chloride (FeCl₃), uses and miscellaneous 7782-50-5, Chlorine, uses and miscellaneous 16921-91-8
RL: PRP (Properties)
(dopants, for **polyaniline**, structure and elec. conductivity in relation to)

IT **25233-30-1, Polyaniline**
RL: PRP (Properties)
(doping, structure, and oxidation states of)

IT **1518-16-7**, TCNQ
RL: PRP (Properties)
(dopants, for **polyaniline**, structure and elec. conductivity in relation to)

RN 1518-16-7 HCAPLUS

CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)



IT **25233-30-1, Polyaniline**
RL: PRP (Properties)
(doping, structure, and oxidation states of)

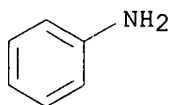
RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3

CMF C6 H7 N



L104 ANSWER 31 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN

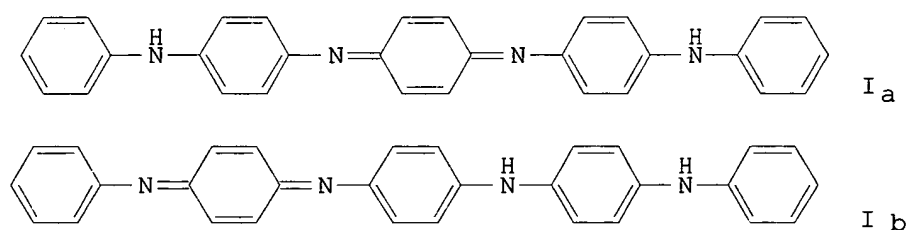
AN 1989:15351 HCAPLUS

DN 110:15351

ED Entered STN: 06 Jan 1989

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

TI Optical properties of model compounds of **polyaniline**
 AU Yang, Sze Ming; Chen, Hsin Juan; Lin, Jiann Shen
 CS Dep. Chem. Eng., Natl. Cent. Univ., Chungli, 54320, Taiwan
 SO Journal of the Chinese Chemical Society (Taipei, Taiwan) (1988), 35(1),
 39-44
 CODEN: JCCTAC; ISSN: 0009-4536
 DT Journal
 LA English
 CC 73-4 (Optical, Electron, and Mass Spectroscopy and Other Related
 Properties)
 Section cross-reference(s): 36
 GI



AB The UV and visible spectra of 6 model compds. were studied. These compds. can be considered as models of **polyaniline** in the reduced, cation radical, partially oxidized, and oxidized forms. After treatment of a mixture of equal molar quantities of the reduced form (di-Ph p-phenylenediamine-DPPD) and the oxidized form (quinone diimine-QDIM) with acid, the following reaction was observed: DPPD + QDIM + 2H⁺ = 2DPPD⁺. After similar treatment of the partially oxidized form (I) with acid, the radical cation salt formed. The UV and visible spectra of **polyaniline** in the reduced form, oxidized form and conductive form are similar to the spectra of DPPD, QDIM and DPPD⁺ or radical cation salt of I, resp. Probably the **polyaniline** synthesized by chemical oxidation of PhNH₂ consists of oxidized and reduced repeat units. Upon protonation a redox reaction (or electron rearrangement) occurs and forms delocalized radical cations (polarons) in the polymer **chain** which are highly conductive.

ST **polyaniline** model compd UV visible; diphenyl phenylenediamine
 UV visible; quinone diimine UV visible

IT Electron spin resonance
 Ultraviolet and visible spectra
 (of **polyaniline** model compds.)

IT 74-31-7, Diphenyl p-phenylenediamine 6246-98-6 19099-70-8 19099-71-9
 80323-66-6 80323-67-7 117992-63-9
 RL: PRP (Properties)
 (UV and visible spectra of)

IT **25233-30-1, Polyaniline**
 RL: PRP (Properties)
 (UV in visible spectra of model compds. of)

IT 19099-67-3
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (hydrolysis of, di(dianilino)terephthalic acid formation from)

IT 101-54-2, p-Aminodiphenylamine
 RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with Et succinylosuccinate, dihydrodi(dianilino)terephthalic acid di-Et ester formation from)

IT 19099-62-8
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with chloranil, di(dianilino)terephthalic acid di-Et ester formation from)

IT 118-75-2, Chloranil, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with dihydrodi(dianilino)terephthalic acid di-Et ester, di(dianilino)terephthalic acid di-Et ester formation from)

IT 1317-36-8, Lead monoxide, reactions 7727-54-0
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with tetraanilinobenzene, oxidized form of tetraanilinobenzene formation from)

IT 19099-69-5
 RL: PRP (Properties)
 (sublimation of, tetraanilinobenzene formation from)

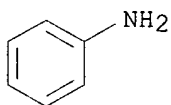
IT 25233-30-1, **Polyaniline**
 RL: PRP (Properties)
 (UV in visible spectra of model compds. of)

RN 25233-30-1 HCAPLUS
 CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

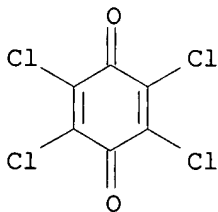
CRN 62-53-3

CMF C6 H7 N



IT 118-75-2, Chloranil, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with dihydrodi(dianilino)terephthalic acid di-Et ester, di(dianilino)terephthalic acid di-Et ester formation from)

RN 118-75-2 HCAPLUS
 CN 2,5-Cyclohexadiene-1,4-dione, 2,3,5,6-tetrachloro- (9CI) (CA INDEX NAME)



L104 ANSWER 32 OF 32 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1987:59926 HCAPLUS
 DN 106:59926
 ED Entered STN: 21 Feb 1987
 TI MIS diode

IN Tsunoda, Makoto; Yanagiura, Satoshi; Eto, Shohei
 PA Mitsubishi Electric Corp., Japan
 SO Jpn. Kokai Tokkyo Koho, 7 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM H01L029-28
 ICS H01L029-94; H01L031-10
 CC 76-3 (Electric Phenomena)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 61163659	A2	19860724	JP 1985-3601	19850112
PRAI	JP 1985-3601		19850112		

AB In a method for fabricating an MIS diode consisting of an electrode conductor layer, a semiconductor layer, an insulative organic-compound layer, and an electrode metal layer, the semiconductor layer is comprised of a π -conjugation polymer prepared by electrolytic polymerization, and the insulative layer has an electron-accepting and/or electron-donating group(s).

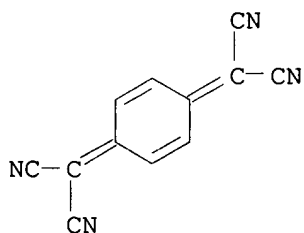
ST MIS diode electrolytic polymn
 IT Diodes

(MIS, fabrication of)
 IT 1518-16-7, TCNQ 9003-47-8, Polyvinylpyridine 25067-54-3, Polyfuran 25067-59-8, Poly(vinyl carbazole) 25233-30-1, Polyaniline 25233-34-5, Polythiophene 25962-03-2 26023-46-1, Poly(p-phenylene-1,3,4-oxadiazole) 30604-81-0, Polypyrrole 72945-66-5, Poly(N-methylpyrrole) 82451-56-7, Polyazulene
 RL: TEM (Technical or engineered material use); USES (Uses)
 (films, for MIS diodes)

IT 1518-16-7, TCNQ 25233-30-1, Polyaniline
 RL: TEM (Technical or engineered material use); USES (Uses)
 (films, for MIS diodes)

RN 1518-16-7 HCAPLUS

CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)



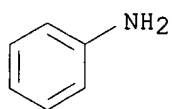
RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3

CMF C6 H7 N

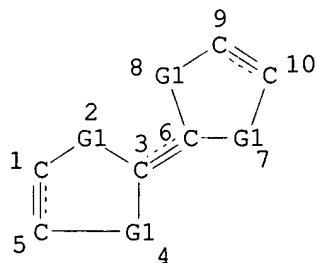


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L2          3 SEA FILE=REGISTRY ABB=ON (1518-16-7/BI OR 25233-30-1/BI OR
          31366-25-3/BI)
L4          64659 SEA FILE=REGISTRY ABB=ON 46.150.9/RID
L5          4093 SEA FILE=REGISTRY ABB=ON L4 AND 1/NR AND 2/O
L11         24589 SEA FILE=REGISTRY ABB=ON 591.49.52/RID
L12         5505 SEA FILE=REGISTRY ABB=ON L11 AND 2/O
L13         1892 SEA FILE=REGISTRY ABB=ON L12 AND 2/NR
L16         350 SEA FILE=REGISTRY ABB=ON L4 AND CYANO AND 1/NR
L17         259 SEA FILE=REGISTRY ABB=ON L16 AND 2-4/N
L21         81850 SEA FILE=REGISTRY ABB=ON 1839.6.36/RID
L22         5957 SEA FILE=REGISTRY ABB=ON L21 AND 3/NR AND (1/O OR 2/N)
L23         84 SEA FILE=REGISTRY ABB=ON L22 AND DICYANO
L24         44 SEA FILE=REGISTRY ABB=ON L22 AND DINITRIL?
L25         121 SEA FILE=REGISTRY ABB=ON L23 OR L24
L27         134 SEA FILE=REGISTRY ABB=ON L22 AND 1/O AND OXO
L28         253 SEA FILE=REGISTRY ABB=ON L25 OR L27
L31         3910 SEA FILE=REGISTRY ABB=ON 16.145.6/RID
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L33         210 SEA FILE=REGISTRY ABB=ON L31 AND L32
L34         STR

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VAR G1=S/SE/TE

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE

L36 SCR 1839

L38 SCR 2022

L39 SCR 1935 AND 2019

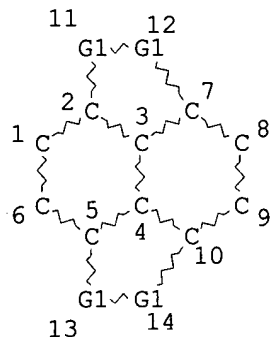
L40 SCR 1926 AND 2019

L42 SCR 2127

L44 SCR 1842

L46 SCR 134 OR 1773

L48 3373 SEA FILE=REGISTRY SSS FUL L34 AND L36 AND (L38 OR L39 OR L40)
 AND L46 NOT (L42 OR L44)
 L52 167 SEA FILE=REGISTRY ABB=ON 591.49.33/RID
 L53 77 SEA FILE=REGISTRY ABB=ON L52 AND (DICYANO? OR DINITRIL?)
 L56 28 SEA FILE=REGISTRY ABB=ON 2508.17.32/RID
 L57 15 SEA FILE=REGISTRY ABB=ON L56 AND 4/N
 L58 13 SEA FILE=REGISTRY ABB=ON L57 AND (DINITRIL? OR DICYAN?)
 L61 STR



VAR G1=S/SE/TE
 NODE ATTRIBUTES:
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 14

STEREO ATTRIBUTES: NONE

L63 666 SEA FILE=REGISTRY SSS FUL L61
 L66 2542 SEA FILE=REGISTRY ABB=ON 46.160.3/RID
 L67 199 SEA FILE=REGISTRY ABB=ON L66 AND 2/NR AND (2/S OR (1/S AND
 (1/TE OR 1/SE)))
 L71 7 SEA FILE=REGISTRY ABB=ON L66 AND 2/NR AND (2/TE OR (1/TE AND
 (1/S OR 1/SE)))
 L74 363 SEA FILE=REGISTRY ABB=ON 46.162.2/RID
 L75 55 SEA FILE=REGISTRY ABB=ON L74 AND 2/NR AND (2/SE OR (1/SE AND
 (1/S OR 1/TE)))
 L76 7 SEA FILE=REGISTRY ABB=ON C6N4/MF
 L77 8 SEA FILE=REGISTRY ABB=ON C10N6/MF
 L78 10 SEA FILE=REGISTRY ABB=ON (L76 OR L77) NOT 1-20/NR
 L79 24096 SEA FILE=HCAPLUS ABB=ON L5
 L80 12745 SEA FILE=HCAPLUS ABB=ON L13
 L81 5026 SEA FILE=HCAPLUS ABB=ON L17
 L82 381 SEA FILE=HCAPLUS ABB=ON L28
 L83 85 SEA FILE=HCAPLUS ABB=ON L53 OR L58
 L84 3342 SEA FILE=HCAPLUS ABB=ON L78
 L85 74 SEA FILE=HCAPLUS ABB=ON L33
 L86 3409 SEA FILE=HCAPLUS ABB=ON L48
 L87 555 SEA FILE=HCAPLUS ABB=ON L63
 L88 116 SEA FILE=HCAPLUS ABB=ON L67 OR L71 OR L75
 L89 43572 SEA FILE=HCAPLUS ABB=ON (L79 OR L80 OR L81 OR L82 OR L83 OR
 L84 OR L85 OR L86 OR L87 OR L88)
 L90 169 SEA FILE=HCAPLUS ABB=ON L89 AND ?POLYMER?(4A)?CONJUGAT?
 L92 21 SEA FILE=HCAPLUS ABB=ON L89 AND (RESIN# OR ?POLYMER?)(6A)?CONJ
 UGAT?(5A)?CHAIN?

L99 1 SEA FILE=REGISTRY ABB=ON L2 AND PMS/CI
 L100 11318 SEA FILE=HCAPLUS ABB=ON L99 OR POLYANILINE OR EMERALDIN?
 L101 157 SEA FILE=HCAPLUS ABB=ON L89 AND L100
 L102 18 SEA FILE=HCAPLUS ABB=ON L101 AND CONJUGAT?
 L103 19 SEA FILE=HCAPLUS ABB=ON L101 AND ?CHAIN?
 L104 32 SEA FILE=HCAPLUS ABB=ON (L92 OR L102 OR L103) NOT L92
 L105 21 SEA FILE=HCAPLUS ABB=ON (L90 OR L101) AND (EL OR ?LUMINES? OR
 LIGHT?(3A)?EMIT?)
 L106 16 SEA FILE=HCAPLUS ABB=ON (L92 OR L104 OR L105) NOT (L92 OR
 L104)

*16 more references -
 structures with EL, etc*

=> d l106 1-16 all hitstr

L106 ANSWER 1 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2004:3414 HCAPLUS

DN 140:67409

ED Entered STN: 04 Jan 2004

TI **Light emitting** device and manufacturing method
 therefor

IN Seo, Satoshi; Yamazaki, Hiroko

PA Japan

SO U.S. Pat. Appl. Publ., 20 pp.

CODEN: USXXCO

DT Patent

LA English

IC ICM H05B033-00

NCL 313506000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related
 Properties)

Section cross-reference(s): 38, 74, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004000866	A1	20040101	US 2003-456609	20030609
	JP 2004087477	A2	20040318	JP 2003-183327	20030626
	EP 1376714	A2	20040102	EP 2003-14751	20030627
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	CN 1469691	A	20040121	CN 2003-147892	20030627
PRAI	JP 2002-189998	A	20020628		

AB A **light emitting** device having the top emission
 structure is described comprising a first electrode (specifically, a
 wiring material such as Ti or Al) having a light-shielding property or
 reflectivity; a conductive polymer layer formed by applying a conductive
 polymer material onto the first electrode; an **electroluminescence**
 film formed in contact with the conductive polymer layer; and a
 light-transmissive second electrode formed on the
electroluminescence film, in which the conductive polymer layer is
 formed of materials including a redox polymer etc., while being free of
 problems regarding work function. The **light emitting**
 element having a top emission structure can be easily manufactured without
 considering an ionization potential of an electrode (particularly an
 electrode in contact with a substrate).

ST **light emitting** device top emission fabrication

IT Polyanilines

RL: DEV (Device component use); USES (Uses)

(conductive polymer, **emeraldine**-base; **light**

emitting device having top emission structure)

*(Ans. w/
 EL not
 already
 printed)*

IT **Electroluminescent** devices
(displays; **light emitting** device having top emission structure)

IT **Luminescent** screens
(**electroluminescent**; **light emitting** device having top emission structure)

IT Conducting polymers
Electroluminescent devices
(**light emitting** device having top emission structure)

IT 7789-24-4, Lithium fluoride (LiF), uses
RL: DEV (Device component use); USES (Uses)
(cathode; **light emitting** device having top emission structure)

IT **31366-25-3**, Tetrathiafulvalene 50851-57-5 126213-51-2,
Polyethylene dioxythiophene
RL: DEV (Device component use); USES (Uses)
(conductive polymer, **emeraldine**-base; **light emitting** device having top emission structure)

IT 7429-90-5, Aluminum, uses 7439-98-7, Molybdenum, uses 7440-02-0,
Nickel, uses 7440-22-4, Silver, uses 7440-25-7, Tantalum, uses
7440-32-6, Titanium, uses 7440-33-7, Tungsten, uses 7440-47-3,
Chromium, uses 7440-50-8, Copper, uses 12033-62-4, Tantalum nitride
12705-37-2, Chromium nitride 25583-20-4, Titanium nitride 25658-42-8,
Zirconium nitride 37245-81-1, Molybdenum nitride 37359-53-8, Tungsten
nitride
RL: DEV (Device component use); USES (Uses)
(electrode; **light emitting** device having top emission structure)

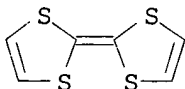
IT 123847-85-8, α -NPD
RL: DEV (Device component use); USES (Uses)
(hole transporting layer; **light emitting** device having top emission structure)

IT 2085-33-8, Alq3
RL: DEV (Device component use); USES (Uses)
(**light emitting** layer; **light emitting** device having top emission structure)

IT **31366-25-3**, Tetrathiafulvalene
RL: DEV (Device component use); USES (Uses)
(conductive polymer, **emeraldine**-base; **light emitting** device having top emission structure)

RN 31366-25-3 HCAPLUS

CN 1,3-Dithiole, 2-(1,3-dithiol-2-ylidene)- (9CI) (CA INDEX NAME)



L106 ANSWER 2 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:892867 HCAPLUS

DN 139:388245

ED Entered STN: 14 Nov 2003

TI **Electroluminescent** devices in which **electroluminescent**
structure excites a fluorescent material

IN Kathirgamanathan, Poopathy

PA Elam-T Limited, UK

SO PCT Int. Appl., 34 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM C09K011-06
 ICS H05B033-14; H01L051-20
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003093394	A1	20031113	WO 2003-GB1932	20030502
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			

PRAI GB 2002-10203 A 20020503

OS MARPAT 139:388245

AB **Electroluminescent** devices are described which comprise an **electroluminescent** structure which **emits light** in the blue, purple/blue or UV section of the spectrum and a fluorescent layer comprising ≥ 1 fluorescent sections each of which sections incorporates a fluorescent material in which device **light emitted** by the **electroluminescent** structure excites a fluorescent material in the fluorescent layer causing **light** to be **emitted** by the fluorescent material.

ST **electroluminescent** device fluorescent layer excitation

IT Amines, uses

RL: DEV (Device component use); USES (Uses)
 (aromatic, complexes, hole-transporting layer; **electroluminescent** devices in which **electroluminescent** structure excites fluorescent material)

IT **Electroluminescent** devices

(blue and UV; **electroluminescent** devices in which **electroluminescent** structure excites fluorescent material)

IT Fluorescent substances

(**electroluminescent** devices in which **electroluminescent** structure excites fluorescent material)

IT Polyanilines

RL: DEV (Device component use); USES (Uses)
 (hole-transporting layer; **electroluminescent** devices in which **electroluminescent** structure excites fluorescent material)

IT 60-00-4D, EDTA, gadolinium complex 67-43-6D, DTPA, gadolinium complex 110-86-1D, Pyridine, metal complexes 869-52-3D, TTHA, gadolinium complex 1662-01-7D, metal complexes 7429-90-5D, Aluminum, complexes 7440-27-9D, Terbium, compds. 7440-29-1D, Thorium, compds. 7440-45-1D, Cerium, compds. 7440-53-1, Europium, uses 7440-53-1D, Europium, compds. 7440-54-2, Gadolinium, uses 7440-54-2D, Gadolinium, compds. 7440-65-5D, Yttrium, compds. 13291-61-7D, DCTA, gadolinium complex 14405-36-8 15133-54-7 21333-45-9 25387-93-3 63448-47-5

RL: DEV (Device component use); USES (Uses)
 (**electroluminescent** material; **electroluminescent**

devices in which **electroluminescent** structure excites
fluorescent material)

IT 905-62-4 1217-45-4, 9,10-Dicyanoanthracene 2085-33-8, Alq3 2872-54-0
13978-85-3 15082-28-7 23467-27-8 28805-75-6, Cyanoanthracene
37407-37-7 50851-57-5 58280-31-2 67952-28-7 135804-06-7
138372-67-5, OXD-7 146162-54-1 148044-16-0 148896-39-3
150405-69-9, TAZ

RL: DEV (Device component use); USES (Uses)
(electron-transmitting material; **electroluminescent** devices
in which **electroluminescent** structure excites fluorescent
material)

IT 86-73-7D, 9H-Fluorene, derivs. 159-66-0D, 9,9'-Spirobi[9H-fluorene],
derivs. **193-44-2** 5521-31-3D, derivs. 25067-59-8,
Poly(vinylcarbazole) **25233-30-1**, **Polyaniline**
31366-25-3D, derivs. 58328-31-7D, derivs. 65181-78-4, TPD
66946-48-3D, derivs. 105389-36-4D, derivs. 123847-85-8, NPB
123847-85-8D, derivs. 123847-87-0D, derivs. 124729-98-2
142289-08-5D, derivs. 203642-12-0D, derivs. 214341-85-2D, derivs.
474974-61-3 474974-62-4

RL: DEV (Device component use); USES (Uses)
(hole-transporting layer; **electroluminescent** devices in which
electroluminescent structure excites fluorescent material)

RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

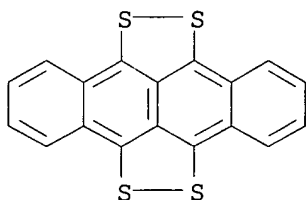
- (1) Anon; PATENT ABSTRACTS OF JAPAN 2000, V2000(06)
- (2) Etchells, M; WO 0220692 A 2002 HCAPLUS
- (3) Fuji Electric Co Ltd; GB 2333897 A 1999 HCAPLUS
- (4) Gao, D; SOLID STATE COMMUNICATIONS 2002, V121(2-3), P145 HCAPLUS
- (5) Kathirgamanathan, P; WO 0032717 A 2000 HCAPLUS
- (6) Kathirgamanathan, P; WO 0044851 A 2000 HCAPLUS
- (7) Kido, J; SCIENCE 1995, V267(5202), P1332 HCAPLUS
- (8) Konishiroku Photo Ind; EP 1013740 A 2000 HCAPLUS
- (9) Matsushita Denki Sangyo Kk; JP 2000277259 A 2000 HCAPLUS
- (10) Minolta Co Ltd; JP 2000091078 A 2000 HCAPLUS
- (11) Sumitomo Chemical Co; EP 1074600 A 2001 HCAPLUS
- (12) XI-Cun, G; SYNTHETIC METALS 1999, V99(2), P127
- (13) Zhu, W; SYNTHETIC METALS 1999, V111-112, P445

IT **193-44-2 25233-30-1**, **Polyaniline**
31366-25-3D, derivs. **66946-48-3D**, derivs.

RL: DEV (Device component use); USES (Uses)
(hole-transporting layer; **electroluminescent** devices in which
electroluminescent structure excites fluorescent material)

RN 193-44-2 HCAPLUS

CN Naphthaceno[5,6-cd:11,12-c'd']bis[1,2]dithiole (6CI, 7CI, 8CI, 9CI) (CA
INDEX NAME)



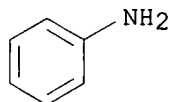
RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

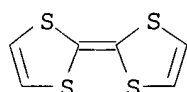
CRN 62-53-3

CMF C6 H7 N



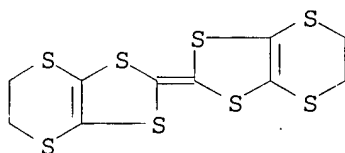
RN 31366-25-3 HCAPLUS

CN 1,3-Dithiole, 2-(1,3-dithiol-2-ylidene)- (9CI) (CA INDEX NAME)



RN 66946-48-3 HCAPLUS

CN 1,3-Dithiolo[4,5-b][1,4]dithiin, 2-(5,6-dihydro-1,3-dithiolo[4,5-b][1,4]dithiin-2-ylidene)-5,6-dihydro- (9CI) (CA INDEX NAME)



L106 ANSWER 3 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:634128 HCAPLUS

DN 139:188104

ED Entered STN: 15 Aug 2003

TI Method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing

IN Kathirgamanathan, Poopathy

PA Elam-T Limited, UK

SO PCT Int. Appl., 58 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM H01L051-40

ICS H01L051-20; H05B033-12; H05B033-10; C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 74, 76

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003067679	A1	20030814	WO 2003-GB542	20030206
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,				

GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
 LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
 PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA,
 UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG,
 CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC,
 NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
 ML, MR, NE, SN, TD, TG

PRAI GB 2002-2997 A 20020208

AB Methods of forming an **electroluminescent** device are described
 which comprise depositing an **electroluminescent** material on a
 substrate by ink jet printing.

ST **electroluminescent** device fabrication ink jet printing

IT Ketones, uses

RL: DEV (Device component use); PEP (Physical, engineering or chemical
 process); PYP (Physical process); PROC (Process); USES (Uses)
 (1,3-diketones, metal complexes, **electroluminescent** material;
 method for forming **electroluminescent** devices comprising
 deposition of **electroluminescent** material on substrate by ink
 jet printing)

IT Amines, uses

RL: DEV (Device component use); USES (Uses)
 (aromatic, complex, hole-transporting material; method for forming
electroluminescent devices comprising deposition of
electroluminescent material on substrate by ink jet printing)

IT Actinide compounds

RL: DEV (Device component use); PEP (Physical, engineering or chemical
 process); PYP (Physical process); PROC (Process); USES (Uses)
 (complexes, **electroluminescent** material; method for forming
electroluminescent devices comprising deposition of
electroluminescent material on substrate by ink jet printing)

IT Glass, uses

RL: DEV (Device component use); USES (Uses)
 (conductive electrode; method for forming **electroluminescent**
 devices comprising deposition of **electroluminescent** material
 on substrate by ink jet printing)

IT **Polymers**, uses

RL: DEV (Device component use); USES (Uses)
 (conjugated, hole-transporting material; method for forming
electroluminescent devices comprising deposition of
electroluminescent material on substrate by ink jet printing)

IT Conducting polymers

(electrode; method for forming **electroluminescent** devices
 comprising deposition of **electroluminescent** material on
 substrate by ink jet printing)

IT Coordination compounds

Organometallic compounds

Rare earth complexes

Transition metal complexes

RL: DEV (Device component use); PEP (Physical, engineering or chemical
 process); PYP (Physical process); PROC (Process); USES (Uses)
 (**electroluminescent** material; method for forming
electroluminescent devices comprising deposition of
electroluminescent material on substrate by ink jet printing)

IT **Electroluminescent** devices

Ink-jet printing

Semiconductor device fabrication

(method for forming **electroluminescent** devices comprising
 deposition of **electroluminescent** material on substrate by ink

- jet printing)
- IT Polyphenyls
RL: DEV (Device component use); USES (Uses)
(polyamino, substituted or unsubstituted, hole-transporting material; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)
- IT Polyamines
RL: DEV (Device component use); USES (Uses)
(polyphenyl, substituted or unsubstituted, hole-transporting material; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)
- IT Conducting polymers
(polythiophenes, substituted and unsubstituted, hole-transporting material; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)
- IT Polyanilines
Polysilanes
RL: DEV (Device component use); USES (Uses)
(substituted and unsubstituted, hole-transporting material; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)
- IT Poly(arylenealkenylenes)
RL: DEV (Device component use); USES (Uses)
(substituted or unsubstituted, hole-transporting material; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)
- IT 7429-90-5, Aluminum, uses 7439-93-2, Lithium, uses 7440-70-2, Calcium, uses 37271-44-6
RL: DEV (Device component use); USES (Uses)
(electrode; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)
- IT 25387-93-3, Lithium 8-quinolinolate
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(**electroluminescent** and electron-injecting material; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)
- IT 87-01-4D, ligand in organometallic complexes 120-46-7, 1,3-Diphenyl-1-3-propanedione 7429-90-5D, Aluminum, organometallic complexes 7439-88-5D, Iridium, organometallic complexes 7439-89-6D, Iron, organometallic complexes 7439-92-1D, Lead, organometallic complexes 7439-93-2D, Lithium, organometallic complexes 7439-95-4D, Magnesium, organometallic complexes 7439-96-5D, Manganese, organometallic complexes 7439-98-7D, Molybdenum, organometallic complexes 7440-02-0D, Nickel, organometallic complexes 7440-03-1D, Niobium, organometallic complexes 7440-04-2D, Osmium, organometallic complexes 7440-05-3D, Palladium, organometallic complexes 7440-06-4D, Platinum, organometallic complexes 7440-09-7D, Potassium, organometallic complexes 7440-16-6D, Rhodium, organometallic complexes 7440-17-7D, Rubidium, organometallic complexes 7440-18-8D, Ruthenium, organometallic complexes 7440-20-2D, Scandium, organometallic complexes 7440-22-4D, Silver, organometallic complexes 7440-23-5D, Sodium, organometallic complexes 7440-24-6D, Strontium, organometallic complexes 7440-25-7D, Tantalum, organometallic complexes 7440-31-5D, Tin, organometallic

complexes 7440-32-6D, Titanium, organometallic complexes 7440-36-0D, Antimony, organometallic complexes 7440-39-3D, Barium, organometallic complexes 7440-41-7D, Beryllium, organometallic complexes 7440-42-8D, Boron, organometallic complexes 7440-43-9D, Cadmium, organometallic complexes 7440-46-2D, Cesium, organometallic complexes 7440-47-3D, Chromium, organometallic complexes 7440-48-4D, Cobalt, organometallic complexes 7440-50-8D, Copper, organometallic complexes 7440-55-3D, Gallium, organometallic complexes 7440-56-4D, Germanium, organometallic complexes 7440-57-5D, Gold, organometallic complexes 7440-62-2D, Vanadium, organometallic complexes 7440-65-5D, Yttrium, organometallic complexes 7440-66-6D, Zinc, organometallic complexes 7440-67-7D, Zirconium, organometallic complexes 7440-70-2D, Calcium, organometallic complexes 7440-74-6D, Indium, organometallic complexes 13930-88-6D, ligand in organometallic complexes 14405-36-8 14913-52-1D, Neodymium 3+, organometallic complexes, uses 15133-54-7 16910-54-6D, Europium 2+, organometallic complexes, uses 18472-30-5D, Erbium 3+, organometallic complexes, uses 18923-26-7D, Cerium 3+, organometallic complexes, uses 18923-27-8D, Ytterbium 3+, organometallic complexes, uses 22541-14-6D, Praseodymium 3+, organometallic complexes, uses 22541-16-8D, Promethium 3+, organometallic complexes, uses 22541-17-9D, Samarium 3+, organometallic complexes, uses 22541-18-0D, Europium 3+, organometallic complexes, uses 22541-19-1D, Gadolinium 3+, organometallic complexes, uses 22541-20-4D, Terbium 3+, organometallic complexes, uses 22541-21-5D, Dysprosium 3+, organometallic complexes, uses 22541-22-6D, Holmium 3+, organometallic complexes, uses 22541-23-7D, Thulium 3+, organometallic complexes, uses 22541-24-8D, Lutetium 3+, organometallic complexes, uses 22578-81-0D, Uranium 3+, organometallic complexes, uses 26201-32-1D, ligand in organometallic complexes 129050-60-8

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)

(**electroluminescent** material; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)

IT 1217-45-4, 9,10-Dicyanoanthracene 28805-75-6, Cyanoanthracene 50851-57-5

RL: DEV (Device component use); USES (Uses)

(electron injecting material; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)

IT 905-62-4 2085-33-8, Alq3 15082-28-7 23467-27-8 58280-31-2 135804-06-7 138372-67-5, OXD-7 146162-54-1 148044-16-0 148896-39-3 150405-69-9, TAZ

RL: DEV (Device component use); USES (Uses)

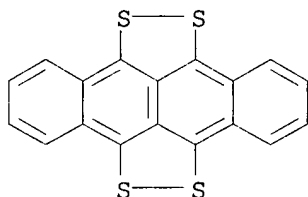
(electron-injecting material; method for forming **electroluminescent** devices comprising deposition of **electroluminescent** material on substrate by ink jet printing)

IT 193-44-2 25067-59-8, Poly(vinylcarbazole) 26009-24-5D, Poly(p-phenylenevinylene), copolymers 55330-79-5 65181-78-4, N,N'-Diphenyl-N,N'-bis(3-methylphenyl)-1,1'-biphenyl-4,4'-diamine 98038-22-3, Aniline-m-sulfanilic acid copolymer 121220-44-8, o-Ethylaniline-o-toluidine copolymer 123847-85-8 124729-98-2, MTDATA 126415-16-5, Aniline-o-anisidine copolymer 126415-20-1, o-Aminophenol-o-toluidine copolymer 126415-22-3, o-Phenylenediamine-o-toluidine copolymer 143686-82-2 157755-87-8 432042-07-4 432042-08-5 474974-61-3 474974-62-4

RL: DEV (Device component use); USES (Uses)

(hole-transporting material; method for forming **electroluminescent** devices comprising deposition of

electroluminescent material on substrate by ink jet printing)
 IT 26009-24-5, Poly(p-phenylenevinylene)
 RL: DEV (Device component use); USES (Uses)
 (substituted or unsubstituted, hole-transporting material; method for
 forming **electroluminescent** devices comprising deposition of
electroluminescent material on substrate by ink jet printing)
 RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE
 (1) Charles, C; WO 9943031 A 1999 HCAPLUS
 (2) Dainippon Togyo Co Ltd; JP 2000160083 A 2000 HCAPLUS
 (3) Kathirgamanathan, P; WO 0032719 A 2000 HCAPLUS
 (4) Kathirgamanathan, P; WO 0044851 A 2000 HCAPLUS
 (5) Oshima, T; US 5932139 A 1999 HCAPLUS
 (6) Seiko Epson Corp; EP 1083775 A 2001 HCAPLUS
 (7) Vleggaar, J; WO 0141229 A 2001 HCAPLUS
 IT **193-44-2**
 RL: DEV (Device component use); USES (Uses)
 (hole-transporting material; method for forming
electroluminescent devices comprising deposition of
electroluminescent material on substrate by ink jet printing)
 RN 193-44-2 HCAPLUS
 CN Naphthaceno[5,6-cd:11,12-c'd']bis[1,2]dithiole (6CI, 7CI, 8CI, 9CI) (CA
 INDEX NAME)



L106 ANSWER 4 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2002:869274 HCAPLUS
 DN 137:360164
 ED Entered STN: 15 Nov 2002
 TI **Electroluminescent** device
 IN Kathirgamanathan, Poopathy
 PA Elam-T Limited, UK
 SO PCT Int. Appl., 46 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM H01L051-20
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related
 Properties)
 Section cross-reference(s): 74, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002091493	A2	20021114	WO 2002-GB2093	20020507
	WO 2002091493	C1	20030306		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,				

PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,
UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU,
TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,
CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,
BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI GB 2001-10999 A 20010504

AB **Electroluminescent** structures are described which comprise a first electrode which is a substrate of semiconducting material (e.g., Si); a layer of an **electroluminescent** material which comprises an **electroluminescent** metal chelate; and a second electrode. The structures can be formed into an array of pixels to form a display and the switching on and off of each pixel controlled. By having pixels which emit different colors a full color display can be formed.

ST **electroluminescent** display semiconductor substrate electrode metal chelate active layer

IT **Electroluminescent** devices
(displays; **electroluminescent** devices with semiconductor electrodes and metal chelate-containing active layers)

IT Electric contacts
Electrodes
(**electroluminescent** devices with semiconductor electrodes and metal chelate-containing active layers)

IT Polyanilines
Rare earth alloys
RL: DEV (Device component use); USES (Uses)
(**electroluminescent** devices with semiconductor electrodes and metal chelate-containing active layers)

IT **Luminescent** screens
Luminescent substances
(**electroluminescent**; **electroluminescent** devices with semiconductor electrodes and metal chelate-containing active layers)

IT Coordination compounds
RL: DEV (Device component use); USES (Uses)
(polynuclear; **electroluminescent** devices with semiconductor electrodes and metal chelate-containing active layers)

IT 60-00-4, EDTA, uses 67-43-6, DTPA **193-44-2** 869-52-3, TTHA 905-62-4 1217-45-4, 9,10 Dicyanoanthracene 1344-57-6D, Uranium dioxide, compds. with metals and organic compds. 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 7429-90-5, Aluminum, uses 7429-90-5D, Aluminum, compds. with metals and organic compds. 7429-91-6D, Dysprosium, compds. with metals and organic compds. 7439-88-5D, Iridium, compds. with metals and organic compds. 7439-89-6D, Iron, compds. with metals and organic compds. 7439-92-1D, Lead, compds. with metals and organic compds. 7439-93-2, Lithium, uses 7439-93-2D, Lithium, compds. with metals and organic compds. 7439-94-3D, Lutetium, compds. with metals and organic compds. 7439-95-4D, Magnesium, compds. with metals and organic compds. 7439-96-5D, Manganese, compds. with metals and organic compds. 7439-98-7D, Molybdenum, compds. with metals and organic compds. 7440-00-8D, Neodymium, compds. with metals and organic compds. 7440-02-0D, Nickel, compds. with metals and organic compds. 7440-03-1D, Niobium, compds. with metals and organic compds. 7440-04-2D, Osmium, compds. with metals and organic compds. 7440-05-3D, Palladium, compds. with metals and organic compds. 7440-06-4D, Platinum, compds. with metals and organic compds. 7440-09-7D, Potassium, compds. with metals and organic compds. 7440-10-0D, Praseodymium, compds. with metals and organic compds. 7440-12-2D, Promethium, compds. with metals and organic compds. 7440-16-6D, Rhodium, compds. with metals and organic compds. 7440-17-7D, Rubidium, compds. with metals and organic compds.

7440-18-8D, Ruthenium, compds. with metals and organic compds. 7440-19-9D, Samarium, compds. with metals and organic compds. 7440-20-2D, Scandium, compds. with metals and organic compds. 7440-21-3, Silicon, uses 7440-22-4D, Silver, compds. with metals and organic compds. 7440-23-5D, Sodium, compds. with metals and organic compds. 7440-24-6D, Strontium, compds. with metals and organic compds. 7440-25-7D, Tantalum, compds. with metals and organic compds. 7440-27-9D, Terbium, compds. with metals and organic compds. 7440-29-1D, Thorium, compds. with metals and organic compds. 7440-30-4D, Thulium, compds. with metals and organic compds. 7440-31-5D, Tin, compds. with metals and organic compds. 7440-32-6D, Titanium, compds. with metals and organic compds. 7440-36-0D, Antimony, compds. with metals and organic compds. 7440-39-3D, Barium, compds. with metals and organic compds. 7440-41-7D, Beryllium, compds. with metals and organic compds. 7440-42-8D, Boron, compds. with metals and organic compds. 7440-43-9D, Cadmium, compds. with metals and organic compds. 7440-45-1D, Cerium, compds. with metals and organic compds. 7440-46-2D, Cesium, compds. with metals and organic compds. 7440-47-3D, Chromium, compds. with metals and organic compds. 7440-48-4D, Cobalt, compds. with metals and organic compds. 7440-50-8D, Copper, compds. with metals and organic compds. 7440-52-0D, Erbium, compds. with metals and organic compds. 7440-53-1D, Europium, compds. with metals and organic compds. 7440-54-2D, Gadolinium, compds. with metals and organic compds. 7440-55-3D, Gallium, compds. with metals and organic compds. 7440-56-4D, Germanium, compds. with metals and organic compds. 7440-57-5D, Gold, compds. with metals and organic compds. 7440-60-0D, Holmium, compds. with metals and organic compds. 7440-61-1D, Uranium, compds. with metals and organic compds. 7440-62-2D, Vanadium, compds. with metals and organic compds. 7440-64-4D, Ytterbium, compds. with metals and organic compds. 7440-65-5D, Yttrium, compds. with metals and organic compds. 7440-66-6D, Zinc, compds. with metals and organic compds. 7440-67-7D, Zirconium, compds. with metals and organic compds. 7440-70-2, Calcium, uses 7440-70-2D, Calcium, compds. with metals and organic compds. 7440-74-6D, Indium, compds. with metals and organic compds. 13291-61-7, DCTA 14280-50-3D, Lead +2, compds. with metals and organic compds., uses 14913-52-1D, Neodymium +3, compds. with metals and organic compds. 15082-28-7 15158-11-9D, Copper +2, compds. with metals and organic compds., uses 15158-12-0D, Lead +4, compds. with metals and organic compds., uses 16065-88-6D, Palladium +2, compds. with metals and organic compds., uses 16065-90-0D, Cerium +4, compds. with metals and organic compds. 16065-92-2D, Thorium +4, compds. with metals and organic compds. 16637-16-4D, Uranyl ion +2, compds. with metals and organic compds. 16910-54-6D, Europium +2, compds. with metals and organic compds. 17493-86-6D, Copper +1, compds. with metals and organic compds., uses 18472-30-5D, Erbium +3, compds. with metals and organic compds. 18923-26-7D, Cerium +3, compds. with metals and organic compds. 18923-27-8D, Ytterbium +3, compds. with metals and organic compds. 22537-46-8D, Palladium +4, compds. with metals and organic compds., uses 22537-50-4D, Tin +4, compds. with metals and organic compds., uses 22541-14-6D, Praseodymium +3, compds. with metals and organic compds. 22541-16-8D, Promethium +3, compds. with metals and organic compds. 22541-17-9D, Samarium +3, compds. with metals and organic compds. 22541-18-0D, Europium +3, compds. with metals and organic compds. 22541-19-1D, Gadolinium +3, compds. with metals and organic compds. 22541-20-4D, Terbium +3, compds. with metals and organic compds. 22541-21-5D, Dysprosium +3, compds. with metals and organic compds. 22541-22-6D, Holmium +3, compds. with metals and organic compds. 22541-23-7D, Thulium +3, compds. with metals and organic compds. 22541-24-8D, Lutetium +3, compds. with metals and organic compds. 22541-31-7D, Platinum +4, compds. with metals and organic compds., uses 22541-90-8D, Tin +2, compds. with metals and organic compds., uses

22542-10-5D, Platinum +2, compds. with metals and organic compds., uses
 22578-81-0D, Uranium +3, compds. with metals and organic compds. 23467-27-8
 25067-59-8, Poly(vinylcarbazole) **25233-30-1, Polyaniline**
 35734-21-5D, Antimony +2, compds. with metals and organic compds., uses
 37271-44-6 41058-93-9D, Antimony +4, compds. with metals and organic
 compds., uses 50851-57-5 58280-31-2 65181-78-4 123847-85-8
 124729-98-2, m-TDATA 135804-06-7 138372-67-5, OXD-7 146162-54-1
 148044-16-0 148896-39-3 150405-69-9, TAZ 474974-61-3 474974-62-4
 RL: DEV (Device component use); USES (Uses)

(**electroluminescent** devices with semiconductor electrodes and
 metal chelate-containing active layers)

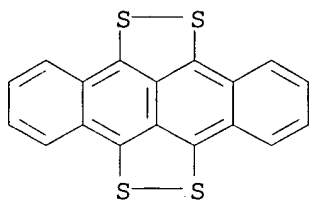
IT **193-44-2 25233-30-1, Polyaniline**

RL: DEV (Device component use); USES (Uses)

(**electroluminescent** devices with semiconductor electrodes and
 metal chelate-containing active layers)

RN 193-44-2 HCAPLUS

CN Naphthaceno[5,6-cd:11,12-c'd']bis[1,2]dithiole (6CI, 7CI, 8CI, 9CI) (CA
 INDEX NAME)



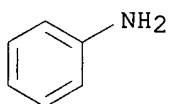
RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3

CMF C6 H7 N



L106 ANSWER 5 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:869018 HCAPLUS

DN 137:360160

ED Entered STN: 15 Nov 2002

TI **Electroluminescent** devices

IN Kathirgamanathan, Poopathy

PA Elam-T Limited, UK

SO PCT Int. Appl., 57 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C09K011-06

ICS H05B033-14; H01L051-20

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related

Properties)

Section cross-reference(s): 76

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002090466	A1	20021114	WO 2002-GB2094	20020507
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
PRAI	GB 2001-10995	A	20010504		
	GB 2001-11000	A	20010504		
AB	Electroluminescent devices comprising an anode, a layer of a metal chelate electroluminescent compound, and a cathode are described in which the cathode and/or the anode is silicon; preferably there is a layer of a hole-transporting material between the anode and the electroluminescent compound and a layer of an electron-transporting material between the electroluminescent compound and the cathode.				
ST	electroluminescent device silicon anode metal chelate active layer				
IT	Electric contacts Electrodes (electroluminescent devices with silicon electrodes and metal chelate-containing active layers)				
IT	Polyanilines Rare earth alloys RL: DEV (Device component use); USES (Uses) (electroluminescent devices with silicon electrodes and metal chelate-containing active layers)				
IT	Luminescent substances (electroluminescent; electroluminescent devices with silicon electrodes and metal chelate-containing active layers)				
IT	Coordination compounds RL: DEV (Device component use); USES (Uses) (polynuclear; electroluminescent devices with silicon electrodes and metal chelate-containing active layers)				
IT	60-00-4, EDTA, uses 67-43-6, DTPA 193-44-2 869-52-3, TTHA 905-62-4 1217-45-4, 9,10 Dicyanoanthracene 1344-57-6D, Uranium dioxide, compds. with metals and organic compds. 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 7429-90-5, Aluminum, uses 7429-90-5D, Aluminum, compds. with metals and organic compds. 7429-91-6D, Dysprosium, compds. with metals and organic compds. 7439-88-5D, Iridium, compds. with metals and organic compds. 7439-89-6D, Iron, compds. with metals and organic compds. 7439-92-1D, Lead, compds. with metals and organic compds. 7439-93-2, Lithium, uses 7439-93-2D, Lithium, compds. with metals and organic compds. 7439-94-3D, Lutetium, compds. with metals and organic compds. 7439-95-4D, Magnesium, compds. with metals and organic compds. 7439-96-5D, Manganese, compds. with metals and organic compds. 7439-98-7D, Molybdenum, compds. with metals and organic compds. 7440-00-8D, Neodymium, compds. with metals and organic compds. 7440-02-0D, Nickel, compds. with metals and organic compds. 7440-03-1D, Niobium, compds. with metals and organic compds. 7440-04-2D, Osmium, compds. with metals and organic compds.				

7440-05-3D, Palladium, compds. with metals and organic compds. 7440-06-4D, Platinum, compds. with metals and organic compds. 7440-09-7D, Potassium, compds. with metals and organic compds. 7440-10-0D, Praseodymium, compds. with metals and organic compds. 7440-12-2D, Promethium, compds. with metals and organic compds. 7440-16-6D, Rhodium, compds. with metals and organic compds. 7440-17-7D, Rubidium, compds. with metals and organic compds. 7440-18-8D, Ruthenium, compds. with metals and organic compds. 7440-19-9D, Samarium, compds. with metals and organic compds. 7440-20-2D, Scandium, compds. with metals and organic compds. 7440-21-3, Silicon, uses 7440-22-4D, Silver, compds. with metals and organic compds. 7440-23-5D, Sodium, compds. with metals and organic compds. 7440-24-6D, Strontium, compds. with metals and organic compds. 7440-25-7D, Tantalum, compds. with metals and organic compds. 7440-27-9D, Terbium, compds. with metals and organic compds. 7440-29-1D, Thorium, compds. with metals and organic compds. 7440-30-4D, Thulium, compds. with metals and organic compds. 7440-31-5D, Tin, compds. with metals and organic compds. 7440-32-6D, Titanium, compds. with metals and organic compds. 7440-36-0D, Antimony, compds. with metals and organic compds. 7440-39-3D, Barium, compds. with metals and organic compds. 7440-41-7D, Beryllium, compds. with metals and organic compds. 7440-42-8D, Boron, compds. with metals and organic compds. 7440-43-9D, Cadmium, compds. with metals and organic compds. 7440-45-1D, Cerium, compds. with metals and organic compds. 7440-46-2D, Cesium, compds. with metals and organic compds. 7440-47-3D, Chromium, compds. with metals and organic compds. 7440-48-4D, Cobalt, compds. with metals and organic compds. 7440-50-8D, Copper, compds. with metals and organic compds. 7440-52-0D, Erbium, compds. with metals and organic compds. 7440-53-1D, Europium, compds. with metals and organic compds. 7440-54-2D, Gadolinium, compds. with metals and organic compds. 7440-55-3D, Gallium, compds. with metals and organic compds. 7440-56-4D, Germanium, compds. with metals and organic compds. 7440-57-5D, Gold, compds. with metals and organic compds. 7440-60-0D, Holmium, compds. with metals and organic compds. 7440-61-1D, Uranium, compds. with metals and organic compds. 7440-62-2D, Vanadium, compds. with metals and organic compds. 7440-64-4D, Ytterbium, compds. with metals and organic compds. 7440-65-5D, Yttrium, compds. with metals and organic compds. 7440-66-6D, Zinc, compds. with metals and organic compds. 7440-67-7D, Zirconium, compds. with metals and organic compds. 7440-70-2, Calcium, uses 7440-70-2D, Calcium, compds. with metals and organic compds. 7440-74-6D, Indium, compds. with metals and organic compds. 13291-61-7, DCTA 14280-50-3D, Lead +2, compds. with metals and organic compds., uses 14913-52-1D, Neodymium +3, compds. with metals and organic compds. 15082-28-7 15158-11-9D, Copper +2, compds. with metals and organic compds., uses 15158-12-0D, Lead +4, compds. with metals and organic compds., uses 16065-88-6D, Palladium +2, compds. with metals and organic compds., uses 16065-90-0D, Cerium +4, compds. with metals and organic compds. 16065-92-2D, Thorium +4, compds. with metals and organic compds. 16637-16-4D, Uranyl ion +2, compds. with metals and organic compds. 16910-54-6D, Europium +2, compds. with metals and organic compds. 17493-86-6D, Copper +1, compds. with metals and organic compds., uses 18472-30-5D, Erbium +3, compds. with metals and organic compds. 18923-26-7D, Cerium +3, compds. with metals and organic compds. 18923-27-8D, Ytterbium +3, compds. with metals and organic compds. 22537-46-8D, Palladium +4, compds. with metals and organic compds., uses 22537-50-4D, Tin +4, compds. with metals and organic compds., uses 22541-14-6D, Praseodymium +3, compds. with metals and organic compds. 22541-16-8D, Promethium +3, compds. with metals and organic compds. 22541-17-9D, Samarium +3, compds. with metals and organic compds. 22541-18-0D, Europium +3, compds. with metals and organic compds. 22541-19-1D, Gadolinium +3, compds. with metals and organic compds. 22541-20-4D, Terbium +3, compds. with metals and organic compds.

22541-21-5D, Dysprosium +3, compds. with metals and organic compds.
 22541-22-6D, Holmium +3, compds. with metals and organic compds.
 22541-23-7D, Thulium +3, compds. with metals and organic compds.
 22541-24-8D, Lutetium +3, compds. with metals and organic compds.
 22541-31-7D, Platinum +4, compds. with metals and organic compds., uses
 22541-90-8D, Tin +2, compds. with metals and organic compds., uses
 22542-10-5D, Platinum +2, compds. with metals and organic compds., uses
 22578-81-0D, Uranium +3, compds. with metals and organic compds. 23467-27-8
 25067-59-8, Poly(vinylcarbazole) **25233-30-1, Polyaniline**
 35734-21-5D, Antimony +2, compds. with metals and organic compds., uses
 37271-44-6 41058-93-9D, Antimony +4, compds. with metals and organic
 compds., uses 50851-57-5 50926-11-9, ITO 58280-31-2 65181-78-4,
 N,N'-Diphenyl-N,N'-bis(3-methylphenyl)-1,1'-biphenyl-4,4'-diamine
 123847-85-8 124729-98-2, m-TDATA 135804-06-7 138372-67-5, OXD-7
 146162-54-1 148044-16-0 148896-39-3 150405-69-9, TAZ 156882-92-7
 474974-61-3 474974-62-4

RL: DEV (Device component use); USES (Uses)
 (electroluminescent devices with silicon electrodes and metal
 chelate-containing active layers)

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE

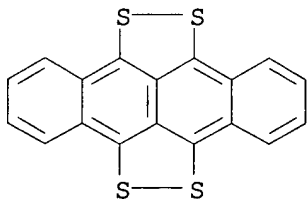
- (1) Anon; PATENT ABSTRACTS OF JAPAN 1996, V1996(08)
- (2) Heinrich, L; IEEE TRANSACTIONS ON ELECTRON DEVICES 1997, V44(8), P1249
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- (3) Ibm; WO 9720355 A 1997 HCAPLUS
- (4) Kathirgamanathan, P; WO 9858037 A 1998 HCAPLUS
- (5) Kathirgamanathan, P; WO 0026323 A 2000 HCAPLUS
- (6) Kathirgamanathan, P; WO 0032717 A 2000 HCAPLUS
- (7) Kathirgamanathan, P; WO 0032718 A 2000 HCAPLUS
- (8) Kathirgamanathan, P; WO 0044851 A 2000 HCAPLUS
- (9) Kiyoshi, T; JP 61071589 A 1986
- (10) Parker, I; APPLIED PHYSICS LETTERS 1994, V64(14), P1774 HCAPLUS
- (11) Secr Defence Brit; WO 9219084 A 1992 HCAPLUS
- (12) Tdk Corp; JP 08096964 A 1996 HCAPLUS
- (13) Watanabe, M; US 5625255 A 1997 HCAPLUS
- (14) Zhou, X; APPLIED PHYSICS LETTERS 1999, V74(4), P609 HCAPLUS

IT **193-44-2 25233-30-1, Polyaniline**

RL: DEV (Device component use); USES (Uses)
 (electroluminescent devices with silicon electrodes and metal
 chelate-containing active layers)

RN 193-44-2 HCAPLUS

CN Naphthaceno[5,6-cd:11,12-c'd']bis[1,2]dithiole (6CI, 7CI, 8CI, 9CI) (CA
 INDEX NAME)

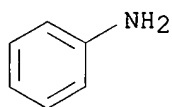


RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
CMF C6 H7 N



L106 ANSWER 6 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:869017 HCAPLUS
DN 137:360159
ED Entered STN: 15 Nov 2002
TI **Electroluminescent** devices
IN Kathirgamanathan, Poopathy
PA Elam-T Limited, UK
SO PCT Int. Appl., 54 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C09K011-06
ICS H05B033-14; H01L051-20
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002090465	A1	20021114	WO 2002-GB2092	20020507
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
PRAI	GB 2001-10995	A	20010504		
	GB 2001-11000	A	20010504		
AB	Electroluminescent devices are described which comprise a first Si electrode (anode), a layer of an electroluminescent compound comprising a metal chelate, and a cathode; preferably there is a layer of a hole-transporting material between the anode and the electroluminescent compound and a layer of an electron-transporting material between the electroluminescent compound and the silicon electrode. The metal chelate may be a mixed metal chelate. The cathode is preferably a low work function metal selected from aluminum, calcium, lithium, silver/magnesium alloys and rare earth metal alloys.				
ST	electroluminescent device silicon anode metal chelate active layer				
IT	Electric contacts				
	Electrodes				
	(electroluminescent devices with silicon anodes and metal chelate-containing active layers)				
IT	Polyanilines				

Rare earth alloys

RL: DEV (Device component use); USES (Uses)

(**electroluminescent** devices with silicon anodes and metal chelate-containing active layers)

IT **Luminescent** substances

(**electroluminescent**; **electroluminescent** devices

with silicon anodes and metal chelate-containing active layers)

IT Coordination compounds

RL: DEV (Device component use); USES (Uses)

(polynuclear; **electroluminescent** devices with silicon anodes and metal chelate-containing active layers)

IT 60-00-4, EDTA, uses 67-43-6, DTPA **193-44-2** 869-52-3, TTHA 905-62-4 1217-45-4, 9,10 Dicyanoanthracene 1344-57-6D, Uranium dioxide, compds. with metals and organic compds. 2085-33-8, Tris(8-hydroxyquinolino)aluminum 7429-90-5, Aluminum, uses 7429-90-5D, Aluminum, compds. with metals and organic compds. 7429-91-6D, Dysprosium, compds. with metals and organic compds. 7439-88-5D, Iridium, compds. with metals and organic compds. 7439-89-6D, Iron, compds. with metals and organic compds. 7439-92-1D, Lead, compds. with metals and organic compds. 7439-93-2, Lithium, uses 7439-93-2D, Lithium, compds. with metals and organic compds. 7439-94-3D, Lutetium, compds. with metals and organic compds. 7439-95-4D, Magnesium, compds. with metals and organic compds. 7439-96-5D, Manganese, compds. with metals and organic compds. 7439-98-7D, Molybdenum, compds. with metals and organic compds. 7440-00-8D, Neodymium, compds. with metals and organic compds. 7440-02-0D, Nickel, compds. with metals and organic compds. 7440-03-1D, Niobium, compds. with metals and organic compds. 7440-04-2D, Osmium, compds. with metals and organic compds. 7440-05-3D, Palladium, compds. with metals and organic compds. 7440-06-4D, Platinum, compds. with metals and organic compds. 7440-09-7D, Potassium, compds. with metals and organic compds. 7440-10-0D, Praseodymium, compds. with metals and organic compds. 7440-12-2D, Promethium, compds. with metals and organic compds. 7440-16-6D, Rhodium, compds. with metals and organic compds. 7440-17-7D, Rubidium, compds. with metals and organic compds. 7440-18-8D, Ruthenium, compds. with metals and organic compds. 7440-19-9D, Samarium, compds. with metals and organic compds. 7440-20-2D, Scandium, compds. with metals and organic compds. 7440-21-3, Silicon, uses 7440-22-4D, Silver, compds. with metals and organic compds. 7440-23-5D, Sodium, compds. with metals and organic compds. 7440-24-6D, Strontium, compds. with metals and organic compds. 7440-25-7D, Tantalum, compds. with metals and organic compds. 7440-27-9D, Terbium, compds. with metals and organic compds. 7440-29-1D, Thorium, compds. with metals and organic compds. 7440-30-4D, Thulium, compds. with metals and organic compds. 7440-31-5D, Tin, compds. with metals and organic compds. 7440-32-6D, Titanium, compds. with metals and organic compds. 7440-36-0D, Antimony, compds. with metals and organic compds. 7440-39-3D, Barium, compds. with metals and organic compds. 7440-41-7D, Beryllium, compds. with metals and organic compds. 7440-42-8D, Boron, compds. with metals and organic compds. 7440-43-9D, Cadmium, compds. with metals and organic compds. 7440-45-1D, Cerium, compds. with metals and organic compds. 7440-46-2D, Cesium, compds. with metals and organic compds. 7440-47-3D, Chromium, compds. with metals and organic compds. 7440-48-4D, Cobalt, compds. with metals and organic compds. 7440-50-8D, Copper, compds. with metals and organic compds. 7440-52-0D, Erbium, compds. with metals and organic compds. 7440-53-1D, Europium, compds. with metals and organic compds. 7440-54-2D, Gadolinium, compds. with metals and organic compds. 7440-55-3D, Gallium, compds. with metals and organic compds. 7440-56-4D, Germanium, compds. with metals and organic compds. 7440-57-5D, Gold, compds. with metals and organic compds. 7440-60-0D, Holmium, compds. with metals and organic compds. 7440-61-1D,

Uranium, compds. with metals and organic compds. 7440-62-2D, Vanadium, compds. with metals and organic compds. 7440-64-4D, Ytterbium, compds. with metals and organic compds. 7440-65-5D, Yttrium, compds. with metals and organic compds. 7440-66-6D, Zinc, compds. with metals and organic compds. 7440-67-7D, Zirconium, compds. with metals and organic compds. 7440-70-2, Calcium, uses 7440-70-2D, Calcium, compds. with metals and organic compds. 7440-74-6D, Indium, compds. with metals and organic compds. 13291-61-7, DCTA 14280-50-3D, Lead +2, compds. with metals and organic compds., uses 14913-52-1D, Neodymium +3, compds. with metals and organic compds. 15082-28-7 15158-11-9D, Copper +2, compds. with metals and organic compds., uses 15158-12-0D, Lead +4, compds. with metals and organic compds., uses 16065-88-6D, Palladium +2, compds. with metals and organic compds., uses 16065-90-0D, Cerium +4, compds. with metals and organic compds. 16065-92-2D, Thorium +4, compds. with metals and organic compds. 16637-16-4D, Uranyl ion +2, compds. with metals and organic compds. 16910-54-6D, Europium +2, compds. with metals and organic compds. 17493-86-6D, Copper +1, compds. with metals and organic compds., uses 18472-30-5D, Erbium +3, compds. with metals and organic compds. 18923-26-7D, Cerium +3, compds. with metals and organic compds. 18923-27-8D, Ytterbium +3, compds. with metals and organic compds. 22537-46-8D, Palladium +4, compds. with metals and organic compds., uses 22537-50-4D, Tin +4, compds. with metals and organic compds., uses 22541-14-6D, Praseodymium +3, compds. with metals and organic compds. 22541-16-8D, Promethium +3, compds. with metals and organic compds. 22541-17-9D, Samarium +3, compds. with metals and organic compds. 22541-18-0D, Europium +3, compds. with metals and organic compds. 22541-19-1D, Gadolinium +3, compds. with metals and organic compds. 22541-20-4D, Terbium +3, compds. with metals and organic compds. 22541-21-5D, Dysprosium +3, compds. with metals and organic compds. 22541-22-6D, Holmium +3, compds. with metals and organic compds. 22541-23-7D, Thulium +3, compds. with metals and organic compds. 22541-24-8D, Lutetium +3, compds. with metals and organic compds. 22541-31-7D, Platinum +4, compds. with metals and organic compds., uses 22541-90-8D, Tin +2, compds. with metals and organic compds., uses 22542-10-5D, Platinum +2, compds. with metals and organic compds., uses 22578-81-0D, Uranium +3, compds. with metals and organic compds. 23467-27-8 25067-59-8, Poly(vinylcarbazole) **25233-30-1, Polyaniline** 35734-21-5D, Antimony +2, compds. with metals and organic compds., uses 37271-44-6 41058-93-9D, Antimony +4, compds. with metals and organic compds., uses 50851-57-5 58280-31-2 65181-78-4, N,N'-Diphenyl-N,N'-bis(3-methylphenyl)-1,1'-biphenyl-4,4'-diamine 123847-85-8 124729-98-2, m-TDATA 135804-06-7 138372-67-5, OXD-7 146162-54-1 148044-16-0 148896-39-3 150405-69-9, TAZ 156882-92-7 474974-61-3 474974-62-4

RL: DEV (Device component use); USES (Uses)

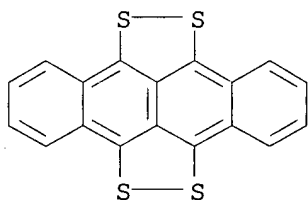
(**electroluminescent** devices with silicon anodes and metal chelate-containing active layers)

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD

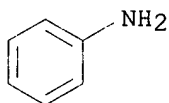
RE

- (1) Anon; PATENT ABSTRACTS OF JAPAN 1996, V1996(08)
- (2) Gee, A; JOURNAL OF THE ELECTROCHEMICAL SOCIETY 1960, V107(9), P787
- (3) Heinrich, L; IEEE TRANSACTIONS ON ELECTRON DEVICES 1997, V44(8), P1249
HCAPLUS
- (4) Ibm; WO 9720355 A 1997 HCAPLUS
- (5) Kathirgamanathan, P; WO 9858037 A 1998 HCAPLUS
- (6) Kathirgamanathan, P; WO 0026323 A 2000 HCAPLUS
- (7) Kathirgamanathan, P; WO 0032718 A 2000 HCAPLUS
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- (9) Kiyoshi, T; JP 61071589 A 1986

(10) Parker, I; APPLIED PHYSICS LETTERS 1994, V64(14), P1774 HCAPLUS
 (11) Secr Defence Brit; WO 9219084 A 1992 HCAPLUS
 (12) Tdk Corp; JP 08096964 A 1996 HCAPLUS
 (13) Watanabe, M; US 5625255 A 1997 HCAPLUS
 (14) Zhou, X; APPLIED PHYSICS LETTERS 1999, V74(4), P609 HCAPLUS
 IT 193-44-2 25233-30-1, **Polyaniline**
 RL: DEV (Device component use); USES (Uses)
 (electroluminescent devices with silicon anodes and metal
 chelate-containing active layers)
 RN 193-44-2 HCAPLUS
 CN Naphthaceno[5,6-cd:11,12-c'd']bis[1,2]dithiole (6CI, 7CI, 8CI, 9CI) (CA
 INDEX NAME)



RN 25233-30-1 HCAPLUS
 CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)
 CM 1
 CRN 62-53-3
 CMF C6 H7 N



L106 ANSWER 7 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2001:376203 HCAPLUS
 DN 135:138033
 ED Entered STN: 25 May 2001
 TI Synthesis and characterization of a **luminescent** binaphthyl-based
 polymer
 AU Wu, X.; Liu, Y.; Zhu, D.
 CS Center for Molecular Science, Institute of Chemistry, Chinese Academy of
 Science, Beijing, 100080, Peop. Rep. China
 SO Synthetic Metals (2001), 121(1-3), 1699-1700
 CODEN: SYMEDZ; ISSN: 0379-6779
 PB Elsevier Science S.A.
 DT Journal
 LA English
 CC 37-3 (Plastics Manufacture and Processing)
 Section cross-reference(s): 73
 AB A new **luminescence conjugated polymer** containing
 binaphthyl moiety was synthesized by Suzuki coupling reaction. It was
 characterized by 1H NMR, FT-IR, element anal., GPC, DSC and TGA. The
 polymer possesses excellent thermal stability (Tg = 287.5°C), and

good solubility in organic solvents. A blue emission was observed from its thin

solid film under irradiation of UV light.

ST t binaphthyl polymer **luminescence**

IT **Luminescence**

UV and visible spectra

(synthesis and characterization of **luminescent** binaphthyl-based polymer)

IT 351422-03-2P 351422-04-3P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(synthesis and characterization of **luminescent** binaphthyl-based polymer)

IT **106-51-4**, 2,5-Cyclohexadiene-1,4-dione, reactions 111-25-1,
1-Bromohexane 602-09-5, [1,1'-Binaphthalene]-2,2'-diol 638-45-9,
1-Iodohexane

RL: RCT (Reactant); RACT (Reactant or reagent)

(synthesis and characterization of **luminescent** binaphthyl-based polymer)

IT 13185-00-7P 14753-51-6P 128424-36-2P 171089-85-3P 191787-87-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(synthesis and characterization of **luminescent** binaphthyl-based polymer)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Donald, R; J Am Chem Soc 1957, V79, P3081

(2) Hu, Q; Macromolecules 1996, V29, P5075 HCAPLUS

(3) Sogah, G; J Am Chem Soc 1979, V101, P3035 HCAPLUS

(4) Thomas, V; Macromol: Chem Phys 1994, V195, P1933

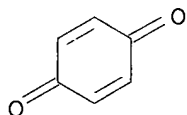
IT **106-51-4**, 2,5-Cyclohexadiene-1,4-dione, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(synthesis and characterization of **luminescent** binaphthyl-based polymer)

RN 106-51-4 HCAPLUS

CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



L106 ANSWER 8 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2000:601333 HCAPLUS

DN 133:310544

ED Entered STN: 30 Aug 2000

TI Step-ladder and ladder-type poly(para-phenylene)s - approaches towards efficient blue-light emitting polymers

AU Setayesh, Sepas; Marsitzky, Dirk; Scherf, Ullrich; Mullen, Klaus

CS Max-Planck-Institute for Polymer Research, Mainz, 55128, Germany

SO Comptes Rendus de l'Academie des Sciences, Serie IV: Physique, Astrophysique (2000), 1(4), 471-478

CODEN: CRACFI

PB Editions Scientifiques et Medicales Elsevier

DT Journal

LA English

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 35, 36, 73, 76

- AB Rod-coil block copolymers with poly[2,7-(9-dialkyl)fluorene] (2,7-PF) blocks as the rod segment and poly(ethyleneoxide) blocks as the flexible coil segment was developed to combine the photophys. properties of **conjugated polymers** with supramol. ordering of block copolymers. In order to balance the electron and hole injection in **light-emitting** devices (LEDs), poly[2,7-(9-fluorenone)] (2,7-PFO) with low and reversible reduction potential (-1.48 V) was synthesized as electron-injection/hole-blocking material. Ladder-type poly(para-phenylene) (LPPP) is one of the mostly favored materials for blue LEDs, since the polymer is fully soluble, structurally well-defined and exhibits high **photoluminescence** quantum efficiency. Spectral narrowing of the PL emission was observed at pumping pulse energies in the blue of < 5 $\mu\text{J/pulse}$. LPPP films spun on a nanostructural DFB resonator can act as single-mode blue-green solid-state lasers, so-called plastic lasers. To bridge the gap between LPPP and 2,7-PF, novel poly[2,8-(6,6,12,12-tetraalkyl)indenofluorene]s (2,8-PIF) were synthesized, that exhibit an efficient blue **photoluminescence** and thermotropic liquid crystallinity >250°.
- ST polyparaphenylene blue LED; ladder polymer blue LED; polyfluorenone blue LED; polyindenofluorene blue LED
- IT Solid state lasers
(based on blue-**light emitting** ladder-type poly(para-phenylene)s)
- IT **Electroluminescent** devices
(blue-emitting, polymer; step-ladder and ladder-type poly(para-phenylene)s as efficient blue-**light emitting** polymers)
- IT **Polymers**, uses
RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)
(**conjugated**; step-ladder and ladder-type poly(para-phenylene)s as efficient blue-**light emitting** polymers)
- IT Polyphenyls
Polyphenyls
RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)
(ladder; step-ladder and ladder-type poly(para-phenylene)s as efficient blue-**light emitting** polymers)
- IT **Luminescence**
UV and visible spectra
(of blue-**light emitting** step-ladder and ladder-type poly(para-phenylene)s)
- IT Ladder polymers
Ladder polymers
RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)
(polyphenyls; step-ladder and ladder-type poly(para-phenylene)s as efficient blue-**light emitting** polymers)
- IT Liquid crystals
(thermotropic; of blue-**light emitting** poly(tetraalkyl indenofluorene))
- IT Liquid crystals
(transitions; of blue-**light emitting** poly(tetraalkyl indenofluorene))
- IT **107207-76-1P**, Poly(9-oxo-9H-fluorene-2,7-diyl)
RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)

(cyclic voltammogram of polyfluorenone showing suitability as electron-injection/hole-blocking layer in multilayer LEDs)

IT 171865-00-2P

RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)
(ladder-type poly(para-phenylene)s as efficient multicolor LEDs and as laser material)

IT 264281-60-9P 264281-63-2P 264884-64-2P 264884-65-3P

RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)
(synthesis and blue-light emitting property of poly[(tetraalkyl)indenofluorene])

RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

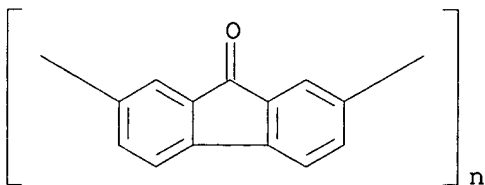
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- (25) Yang, Y; MRS Bulletin 1997, V22(6), P31 HCAPLUS
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IT 107207-76-1P, Poly(9-oxo-9H-fluorene-2,7-diyl)

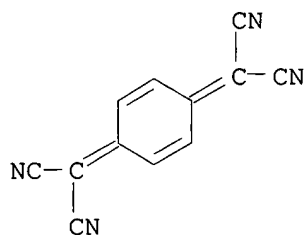
RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)
(cyclic voltammogram of polyfluorenone showing suitability as electron-injection/hole-blocking layer in multilayer LEDs)

RN 107207-76-1 HCAPLUS

CN Poly(9-oxo-9H-fluorene-2,7-diyl) (9CI) (CA INDEX NAME)



L106 ANSWER 9 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1999:712247 HCAPLUS
 DN 132:13813
 ED Entered STN: 08 Nov 1999
 TI Combinatorial chemistry approach to development of molecular plastic solar cells
 AU Godovsky, Dmitri; Inganas, Olle; Brabec, Christoph J.; Sariciftci, N. Serdar; Hummelen, Jan C.; Janssen, Rene A. J.; Prato, M.; Maggini, M.; Segura, Jose; Martin, Nazario
 CS IFM, Linkoping University, Linkoping, S-581 83, Swed.
 SO AIP Conference Proceedings (1999), 486(Electronic Properties of Novel Materials--Science and Technology of Molecular Nanostructures), 483-486
 CODEN: APCPCS; ISSN: 0094-243X
 PB American Institute of Physics
 DT Journal
 LA English
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 38
 AB We used a combinatorial chemical approach to develop the mol. plastic solar cells based on soluble fullerene derivs. or solubilized TCNQ mols. in combination with **conjugated polymers**. Profiles, formed by the diffusion of low mol. weight component in the spin-cast polymer host were used. The ratio between low mol. weight acceptor and polymer changed along the diffusion gradient direction from 100% to 0% at the distances 10-20 mm. Optical and electrophys. properties such as absorption, **luminescence**, short circuit current and open circuit voltage were measured using a specially designed installation with the resolution of 25 points per mm.
 ST mol plastic solar cell
 IT Solar cells
 (combinatorial chemical approach to development of mol. plastic solar cells)
 IT Fullerenes
 RL: DEV (Device component use); USES (Uses)
 (combinatorial chemical approach to development of mol. plastic solar cells)
 IT **Polymers**, uses
 RL: DEV (Device component use); USES (Uses)
 (**conjugated**; combinatorial chemical approach to development of mol. plastic solar cells)
 IT **1518-16-7D**, Tcnq, derivs. 26009-24-5, Poly(1,4-phenylene-1,2-ethenediyl)
 RL: DEV (Device component use); USES (Uses)
 (combinatorial chemical approach to development of mol. plastic solar cells)
 IT **1518-16-7D**, Tcnq, derivs.
 RL: DEV (Device component use); USES (Uses)
 (combinatorial chemical approach to development of mol. plastic solar cells)
 RN 1518-16-7 HCAPLUS
 CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)



L106 ANSWER 10 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1999:702246 HCAPLUS
 DN 132:71116
 ED Entered STN: 03 Nov 1999
 TI **Light emitting** devices from organic charge transfer
 adduct thin films
 AU Kathirgamanathan, P.; Kandappu, V.; Hara, S.; Chandrakumar, K.;
 Marianesan, S. L.; Selvaranjan, S.; Surendrakumar, S.; Toohey, M. J.
 CS Sch. Electrical, Electronic Information Engineering, Centre for Electronic
 Materials for Engineering, South Bank University, London, UK
 SO Materials Letters (1999), 40(6), 285-293
 CODEN: MLETDJ; ISSN: 0167-577X
 PB Elsevier Science B.V.
 DT Journal
 LA English
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related
 Properties)
 Section cross-reference(s): 22, 76
 AB Thin film devices of charge transfer adducts of tetrathiafulvalene (TTF)
 were fabricated. A luminance of 5 cd m⁻² was achieved for a device
 structure ITO/poly(aniline)/ TTF(NO₃)0.55/Al whose **EL** spectrum
 has a broad peak at 645 nm. The devices were fabricated by spin coating
 from solns. of the adducts. A luminous efficiency of 5 + 10⁻⁴ lm
 W⁻¹ was obtained for these devices which is comparable to that of
 ITO/poly(aniline)/Alq₃/Al (5.2 + 10⁻⁴ lm W⁻¹) under same fabrication
 conditions. The single layer, mixed layer and double layer devices
 fabricated in this study fit the space charge limited model. Devices
 fabricated from [TTF-Alq₃] **emit white light** (40 cd
 m⁻²) with a luminous efficiency of 6.6 + 10⁻⁴ lm W⁻¹. The color of
light emitted appears to depend on the effective oxidation
 state of TTF in the adducts.
 ST **light emitting** device tetra thia fulvalene charge
 transfer adduct; **electroluminescence** tetrathiafulvalene nitrate
 aluminum quinolinolato; chloride tetrathiafulvalene cation radical
luminescence
 IT Space charge
 (current-voltage relationship of **light emitting**
 devices using tetrathiafulvalene nitrate)
 IT Electron transfer
 (**light emitting** devices using tetrathiafulvalene
 charge transfer adducts)
 IT Polyanilines
 RL: DEV (Device component use); USES (Uses)
 (**light emitting** devices using tetrathiafulvalene
 nitrate and poly(aniline) coated ITO electrodes)
 IT **Luminescence**
Luminescence, electroluminescence

(of tetrathiafulvalene charge transfer adducts)

IT Electric current-potential relationship
(space charge limited current of **light emitting** devices using tetrathiafulvalene nitrate)

IT Optical absorption
(tetrathiafulvalene charge transfer adducts)

IT Electric current carriers
(transport; **light emitting** devices using tetrathiafulvalene nitrate)

IT **Electroluminescent** devices
(using tetrathiafulvalene nitrate and aluminum tris(quinolinolato))

IT **1518-16-7D**, fluoroderivs.
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(**electroluminescence** relative to other tetrathiafulvalene adducts)

IT **31366-25-3**, Tetrathiafulvalene
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(green **light emitting** devices)

IT **1518-16-7**
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(**light emitting** devices)

IT 852-38-0, PBD 9011-14-7, PMMA
RL: DEV (Device component use); USES (Uses)
(**light emitting** devices using tetrathiafulvalene nitrate and)

IT 2085-33-8, Tris(8-quinolinolato)aluminum
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(**light emitting** devices using tetrathiafulvalene nitrate and)

IT **25233-30-1**, Poly(aniline)
RL: DEV (Device component use); USES (Uses)
(**light emitting** devices using tetrathiafulvalene nitrate and poly(aniline) coated ITO electrodes)

IT 50926-11-9, ITO
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(**polyaniline** coating in **light emitting** devices using tetrathiafulvalene nitrate)

RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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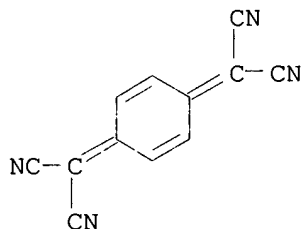
IT 1518-16-7D, fluoroderivs.

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)

(**electroluminescence** relative to other tetrathiafulvalene adducts)

RN 1518-16-7 HCAPLUS

CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)

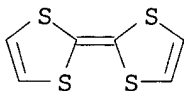


IT 31366-25-3, Tetrathiafulvalene

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(green **light emitting** devices)

RN 31366-25-3 HCAPLUS

CN 1,3-Dithiole, 2-(1,3-dithiol-2-ylidene)- (9CI) (CA INDEX NAME)

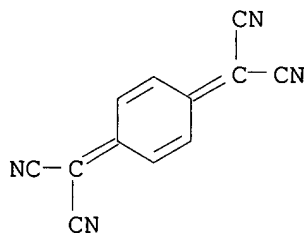


IT 1518-16-7

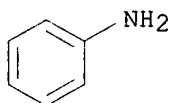
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(**light emitting** devices)

RN 1518-16-7 HCAPLUS

CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)



IT 25233-30-1, Poly(aniline)
 RL: DEV (Device component use); USES (Uses)
 (light emitting devices using tetrathiafulvalene
 nitrate and poly(aniline) coated ITO electrodes)
 RN 25233-30-1 HCAPLUS
 CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)
 CM 1
 CRN 62-53-3
 CMF C6 H7 N



L106 ANSWER 11 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1999:593787 HCAPLUS
 DN 131:311041
 ED Entered STN: 21 Sep 1999
 TI Conjugated poly-P-phenylene (PPP) from poly(1,3-cyclohexadiene) (PCHD)
 homo- and block copolymers: controlled processability and properties
 AU Mays, J.; Hong, K.; Wang, Y.; Advincula, R. C.
 CS Department of Chemistry, University of Alabama at Birmingham, Birmingham,
 AL, 35294-1240, USA
 SO Materials Research Society Symposium Proceedings (1999), 561(Organic
 Nonlinear Optical Materials and Devices), 189-194
 CODEN: MRSPDH; ISSN: 0272-9172
 PB Materials Research Society
 DT Journal
 LA English
 CC 36-5 (Physical Properties of Synthetic High Polymers)
 Section cross-reference(s): 73, 74
 AB Conjugated poly-p-phenylene (PPP) materials were prepared from
 poly(1,3-cyclohexadiene) (PCHD). The precursor PCHD polymers were
 synthesized by living anionic polymerization to produce homo- and block
 copolymer
 configurations with polystyrene. A variety of initiators, solvent, and
 temperature conditions were used to determine the right parameters for
 obtaining
 narrow MWD [mol. weight distribution] polymers. The conditions for
 polymerization
 determined the ratio of 1,2 and 1,4 isomers in the microstructure. Conversion
 to PPP derivs. was effected by dehydrogenation reaction with chloranil.
 Systematic conversion to a **conjugated polymer** with

increased solubility and **photoluminescence** properties was achieved. The microstructure, MW, and block copolymer composition affect processability and energy conversion properties dramatically.

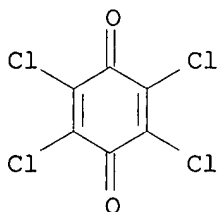
- ST cyclohexadiene **polymer** precursor **conjugated**
polyphenylene prepn
- IT Polymerization
(anionic; control of **photoluminescence** and processability of
conjugated poly(p-phenylene)s by conversion of poly(cyclohexadiene)s)
- IT **Polymers**, uses
RL: CAT (Catalyst use); USES (Uses)
(**conjugated**, polyphenylenes; control of
photoluminescence and processability of conjugated
poly(p-phenylene)s by conversion of poly(cyclohexadiene)s)
- IT Dehydrogenation
Luminescence
(control of **photoluminescence** and processability of
conjugated poly(p-phenylene)s by conversion of poly(cyclohexadiene)s)
- IT 109-72-8, n-Butyllithium, uses 865-47-4 2785-29-7, Potassium benzyl
RL: CAT (Catalyst use); USES (Uses)
(anionic initiator; control of **photoluminescence** and
processability of conjugated poly(p-phenylene)s by conversion of
poly(cyclohexadiene)s)
- IT 24991-24-0, Poly(1,2-phenylene) 25190-62-9, Poly-p-phenylene
RL: PRP (Properties)
(control of **photoluminescence** and processability of
conjugated poly(p-phenylene)s by conversion of poly(cyclohexadiene)s)
- IT 592-57-4, 1,3-Cyclohexadiene
RL: RCT (Reactant); RACT (Reactant or reagent)
(control of **photoluminescence** and processability of
conjugated poly(p-phenylene)s by conversion of poly(cyclohexadiene)s)
- IT **118-75-2**, Chloranil, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(dehydrogenation reagent; control of **photoluminescence** and
processability of conjugated poly(p-phenylene)s by conversion of
poly(cyclohexadiene)s)
- IT 25155-73-1, 1,3-Cyclohexadiene-styrene copolymer 27986-50-1,
Poly(1,3-cyclohexadiene)
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(precursor; control of **photoluminescence** and processability
of conjugated poly(p-phenylene)s by conversion of
poly(cyclohexadiene)s)

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

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- IT **118-75-2**, Chloranil, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(dehydrogenation reagent; control of **photoluminescence** and
processability of conjugated poly(p-phenylene)s by conversion of
poly(cyclohexadiene)s)
- RN 118-75-2 HCAPLUS

CN 2,5-Cyclohexadiene-1,4-dione, 2,3,5,6-tetrachloro- (9CI) (CA INDEX NAME)



L106 ANSWER 12 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1998:446733 HCAPLUS

DN 129:136685

ED Entered STN: 20 Jul 1998

TI Structure and Properties of Cyano-Substituted Poly(2,5-dialkoxy-p-phenylene vinylene)s

AU Chen, Show-An; Chang, En-Chung

CS Chemical Engineering Department, National Tsing-Hua University, Hsinchu, 30043, Taiwan

SO Macromolecules (1998), 31(15), 4899-4907

CODEN: MAMOBX; ISSN: 0024-9297

PB American Chemical Society

DT Journal

LA English

CC 36-2 (Physical Properties of Synthetic High Polymers)

Section cross-reference(s): 73

AB Soluble, crystallizable cyano-substituted poly(2,5-dialkoxy-p-phenylene vinylene)s (RO-CNPPV)s having the alkoxy groups hexyloxy, octyloxy, and decyloxy were prepared using the Knoevenagel condensation method and characterized by x-ray diffraction, DSC, and UV-vis and **photoluminescence** (PL) spectroscopy measurements. In the ordered phase, the polymers have a two-layer structure with side chain aligned in the all-trans conformation lying on the same plane of the coplanar main chains. However, the presence of the bulky cyano group on the vinylene segment leads to a deviation from coplanarity and poor stacking of the main chains and therefore the absence of vibronic transitions in the UV-vis and PL spectra (which usually appear in the PPV and RO-PPVs). As temperature increases, the extent of aromatic ring distortion increases gradually, causing a continuous increase in the d-spacing between two neighboring stacking subchains (dm), which increases up to 16% at the end of melting, but the side chain retains the same orientation and the d-spacing between two successive layers (ds) expands by only about 3%. This effect is opposite to that of poly(3-dodecylthiophene) having a vibronic transition, for which dm remains constant and ds increases by 22% mainly in the melting region. In the melting range, although the aromatic rings distort to a higher extent, and in the meantime the side chains become more coil-like and randomly oriented, both can recover to their original alignments after cooling down to below the melting region. In the entire thermal process, a significant thermochromism occurs with the optical absorption maximum shifting by 81 nm compared to that of poly(3-dodecylthiophene), 100 nm, while the emission maximum blue-shifts by 94 nm. As temperature rises well above

Tm (by more than 40°), the aromatic rings distort to a high extent such that the side chains intermingle with each other, causing a strongly

- hindered relaxational motion of the main chains after the cooling. They can recover to their original state only by redissolving and then recasting. No liquid crystalline state was observed in the RO-CNPPVs.
- ST cyano polyalkoxyphenylenevinylene phase chain structure; orientation chain optical absorption cyano polyalkoxyphenylenevinylene; thermochromism cyano polyalkoxyphenylenevinylene chain relaxation
- IT Polymerization
(Knoevenagel condensation; preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)
- IT Polymer chains
(conformation; preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)
- IT **Polymers**, properties
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(**conjugated**; preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)
- IT Poly(arylenealkenylenes)
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(cyano-group and alkoxy-group containing; preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)
- IT Polymer chains
(entanglement; preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)
- IT Polymer chains
(orientation; preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)
- IT Polymer chains
(packing; preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)
- IT Polymer morphology
(phase; preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)
- IT Crystallinity
Electron delocalization
Knoevenagel reaction
Phase transition enthalpy
Rotational barrier
Structural phase transition
Thermochromism
Thermoluminescence
(preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)
- IT Polymer chains
(side; preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)
- IT Optical absorption
(thermally induced; preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)
- IT Bond angle
(torsional; preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)
- IT 210475-60-8P, 1,4-Bis(cyanomethyl)-2,5-bis(hexyloxy)benzene-2,5-bis(hexyloxy)terephthaldehyde copolymer, SRU
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(all-trans; preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)
- IT 123440-34-6P, 2,5-Bis(octyloxy)terephthaldehyde 129080-34-8P, 2,5-Bis(decyloxy)terephthaldehyde 151903-52-5P, 2,5-

Bis(hexyloxy)terephthaldehyde 151903-53-6P, 1,4-Bis(cyanomethyl)-2,5-bis(hexyloxy)benzene 163233-69-0P, 1,4-Bis(cyanomethyl)-2,5-bis(decyloxy)benzene 177281-34-4P, 1,4-Bis(cyanomethyl)-2,5-bis(octyloxy)benzene
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(monomer; preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)

IT 151903-54-7P, 1,4-Bis(cyanomethyl)-2,5-bis(hexyloxy)benzene-2,5-bis(hexyloxy)terephthaldehyde copolymer 210344-61-9P, 1,4-Bis(cyanomethyl)-2,5-bis(octyloxy)benzene-2,5-bis(octyloxy)terephthaldehyde copolymer 210344-62-0P, 1,4-Bis(cyanomethyl)-2,5-bis(octyloxy)benzene-2,5-bis(octyloxy)terephthaldehyde copolymer, SRU 210344-63-1P, 1,4-Bis(cyanomethyl)-2,5-bis(decyloxy)benzene-5-bis(decyloxy)terephthaldehyde copolymer 210344-64-2P, 1,4-Bis(cyanomethyl)-2,5-bis(decyloxy)benzene-5-bis(decyloxy)terephthaldehyde copolymer, SRU

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)

IT 84-58-2, 2,3-Dichloro-5,6-dicyano-1,4-benzoquinone

RL: RCT (Reactant); RACT (Reactant or reagent) (preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)

IT 67399-93-3P, 1,4-Bis(hexyloxy)benzene 153282-57-6P, 1,4-Bis(bromomethyl)-2,5-bis(hexyloxy)benzene 158982-83-3P, 1,4-Bis(hydroxymethyl)-2,5-bis(hexyloxy)benzene

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

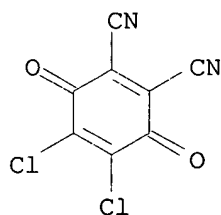
(preparation and structure and thermochromic properties of cyano-containing poly(2,5-dialkoxy-p-phenylene vinylene)s)

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 IT 84-58-2, 2,3-Dichloro-5,6-dicyano-1,4-benzoquinone
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation and structure and thermochromic properties of cyano-containing
 poly(2,5-dialkoxy-p-phenylene vinylene)s)
 RN 84-58-2 HCAPLUS
 CN 1,4-Cyclohexadiene-1,2-dicarbonitrile, 4,5-dichloro-3,6-dioxo- (6CI, 8CI,
 9CI) (CA INDEX NAME)



L106 ANSWER 13 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1997:108269 HCAPLUS
 DN 126:192380
 ED Entered STN: 15 Feb 1997
 TI Organic **light emitting** diodes with blended structures
 using polymer dispersed dyes
 AU Lee, J. G.; Jung, Y. Y.; Choi, D. K.; Park, B.; Woo, H. S.; Kim, Y.; Ha,
 C. S.; Kim, Y. S.; Kim, Y. R.
 CS Electronic Materials Lab., Inst. for Advanced Eng., Yong-In, 449-800, S.
 Korea
 SO Ungyong Mulli (1996), 9(6), 795-800
 CODEN: HMMHEY; ISSN: 1013-7009
 PB Korean Physical Society
 DT Journal
 LA Korean
 CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related
 Properties)
 Section cross-reference(s): 38, 41, 76
 AB LEDs were fabricated by dye-dispersed polymer blends. The emissive dyes

were composed of 1,1,4,4-tetraphenyl-1,3-butadiene (TB) and 2-(4-biphenyl)-5-(4-tert-butylphenyl)-1,3,4-oxadiazole (butyl-PBD), which dispersed into polyimide mixed with **polyaniline** (PANI) of **emeraldine** salt type doped with camphorsulfonic acid (CSA). The tetrathiafulvalene (TTF) was introduced into the LEDs as electron transport material. The device with the emissive blends dispersed in PANI has strong blue-violet **electroluminescence** (EL) peaked near 2.72 eV at room temperature and a relatively high EL efficiency compared to that of the LED without PANI. The optical and the elec. properties of devices including the EL efficiency and the I-V characteristics with and without PANI, are discussed.

ST diode **light emitting** polymer dispersed dye; LED
blended polymer dispersed dye

IT Electric current-potential relationship
Electric properties
Luminescence, electroluminescence
Optical properties
(of polymer dispersed dyes)

IT Polyimides, uses
RL: DEV (Device component use); USES (Uses)
(organic LEDs with blended structures using dyes dispersed in camphorsulfonic acid-doped **polyaniline** of **emeraldine** salt type mixed with)

IT Polyamines
RL: DEV (Device component use); USES (Uses)
(organic LEDs with blended structures using dyes dispersed in polyimide mixed with camphorsulfonic acid-doped)

IT Dyes
(organic LEDs with blended structures using polymer dispersed)

IT **Electroluminescent** devices
(with blended structures using polymer dispersed dyes)

IT 1450-63-1, 1,1,4,4-Tetraphenyl-1,3-butadiene 15082-28-7
RL: MOA (Modifier or additive use); USES (Uses)
(of polymer dispersed dyes)

IT **25233-30-1D, Polyaniline, emeraldine** salt type
RL: DEV (Device component use); USES (Uses)
(organic LEDs with blended structures using dyes dispersed in polyimide mixed with camphorsulfonic acid-doped)

IT **31366-25-3, Tetrathiafulvalene**
RL: DEV (Device component use); USES (Uses)
(organic LEDs with blended structures using dyes dispersed in polyimide mixed with camphorsulfonic acid-doped **polyaniline** (PANI) of **emeraldine** salt containing)

IT 3144-16-9, Camphorsulfonic acid
RL: MOA (Modifier or additive use); USES (Uses)
(organic LEDs with blended structures using dyes dispersed in polyimide mixed with **polyaniline** of **emeraldine** salt type doped with)

IT **25233-30-1D, Polyaniline, emeraldine** salt type
RL: DEV (Device component use); USES (Uses)
(organic LEDs with blended structures using dyes dispersed in polyimide mixed with camphorsulfonic acid-doped)

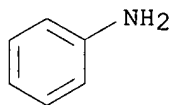
RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

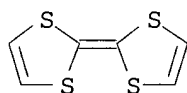
CM 1

CRN 62-53-3

CMF C6 H7 N



IT **31366-25-3**, Tetrathiafulvalene
 RL: DEV (Device component use); USES (Uses)
 (organic LEDs with blended structures using dyes dispersed in polyimide
 mixed with camphorsulfonic acid-doped **polyaniline** (PANI) of
emeraldine salt containing)
 RN 31366-25-3 HCAPLUS
 CN 1,3-Dithiole, 2-(1,3-dithiol-2-ylidene)- (9CI) (CA INDEX NAME)



L106 ANSWER 14 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1997:48131 HCAPLUS
 DN 126:90011
 ED Entered STN: 22 Jan 1997
 TI Photoinduced electron transfer between **conjugated**
polymers and a homologous series of TCNQ derivatives
 AU Heeger, Alan J.; Wudl, Fred; Sariciftci, N. Serdar; Janssen, Rene A. J.;
 Martin, Nazario
 CS Institute Polymers and Organic Solids, University California, Santa
 Barbara, CA, 93106, USA
 SO Journal de Physique I (1996), 6(12), 2151-2158
 CODEN: JPGCE8; ISSN: 1155-4304
 PB Editions de Physique
 DT Journal
 LA English
 CC 36-5 (Physical Properties of Synthetic High Polymers)
 Section cross-reference(s): 37, 74
 AB The results of photoinduced absorption (PIA) and **photoluminescence**
 studies of the photoinduced electron transfer reactions from
conjugated polymer donors onto a series of acceptors
 based on TCNQ and benzoquinone derivs. containing fused aromatic rings are
 summarized. Poly[2-methoxy-5-(2-ethylhexyloxy)-p-phenylenevinylene] and
 poly[3-(2-(3-methylbutoxy)ethyl)thiophene] were used in the study. The
 results are compared to the well-defined photoinduced electron transfer
 demonstrated from **conjugated polymer** donors onto
 buckminsterfullerene, C60. For the TCNQ derivs., the efficiency of the
 electron transfer process correlates with the reduction potential of the
 acceptors. However, photoinduced electron transfer was not observed in the
 case of the benzoquinone derivs., although their electrochem. reduction
 potentials are similar to C60.
 ST photoinduced electron transfer **conjugated polymer**
 TCNQ; **luminescence conjugated polymer** TCNQ
 deriv; polythiophene TCNQ deriv photoinduced electron transfer;
 polyarylenealkenylene TCNQ deriv photoinduced electron transfer
 IT IR spectra
 (near-IR; photoinduced electron transfer between **conjugated**

polymers and a homologous series of TCNQ derivs.)

IT Electron acceptors
Electron donors
Luminescence
Photoinduced electron transfer
Reduction potential
(photoinduced electron transfer between **conjugated polymers** and a homologous series of TCNQ derivs.)

IT Poly(arylenealkenylenes)
RL: PEP (Physical, engineering or chemical process); PRP (Properties);
PROC (Process)
(photoinduced electron transfer between **conjugated polymers** and a homologous series of TCNQ derivs.)

IT Polymers, properties
RL: PEP (Physical, engineering or chemical process); PRP (Properties);
PROC (Process)
(polythiophenes; photoinduced electron transfer between **conjugated polymers** and a homologous series of TCNQ derivs.)

IT **1518-16-7** 70359-39-6, 11,11,12,12-Tetracyano-9,10-anthraquinodimethane 120086-24-0 120086-26-2 120086-27-3
138184-36-8 185739-92-8 185739-94-0
RL: PEP (Physical, engineering or chemical process); PRP (Properties);
PROC (Process)
(photoinduced electron transfer between **conjugated polymers** and a homologous series of TCNQ derivs.)

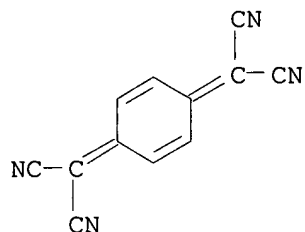
RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD
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IT **1518-16-7**
RL: PEP (Physical, engineering or chemical process); PRP (Properties);
PROC (Process)
(photoinduced electron transfer between **conjugated polymers** and a homologous series of TCNQ derivs.)

RN 1518-16-7 HCAPLUS
CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA

INDEX NAME)



L106 ANSWER 15 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1995:954244 HCAPLUS

DN 124:41143

ED Entered STN: 30 Nov 1995

TI Photoinduced electron transfer reactions in mixed films of π -**conjugated polymers** and a homologous series of tetracyano-p-quinodimethane derivatives

AU Janssen, Rene A. J.; Christiaans, Marwijn P. T.; Hare, Casey; Martin, Nazario; Sariciftci, N. Serdar; Heeger, Alan J.; Wudl, Fred

CS Inst. Polymers Org. Solids, Univ. California, Santa Barbara, CA, 93106-5090, USA

SO Journal of Chemical Physics (1995), 103(20), 8840-5

CODEN: JCPSA6; ISSN: 0021-9606

PB American Institute of Physics

DT Journal

LA English

CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

AB Near-steady-state photoinduced absorption (PIA) and **photoluminescence** studies are presented on photoinduced electron transfer reactions from poly[2-methoxy-5-(2'-ethylhexyloxy)-1,4-phenylene vinylene] (MEH-PPV) and poly[3-(2-(3-methylbutoxy)ethyl)thiophene] (P3MBET) as donors (D) onto a homologous series of tetracyano-p-quinodimethane (TCNQ) derivs. containing fused aromatic rings as acceptors (A)

to systematically study the effect of acceptor electron affinity. We observe that composite films of these D/A couples give rise to long-lived charge separated states upon photoexcitation, as evidenced from the formation of polaron bands (radical cation absorption) in the PIA and the concomitant loss of the metastable triplet PIA and **photoluminescence** that are observed in pristine MEH-PPV and P3MBET. We find that the efficiency of the photoinduced electron transfer reaction correlates with the reduction potential of the acceptors.

ST photochem electron transfer polymer tetracyanoquinodimethane deriv

IT **Luminescence**

Optical absorption

Photolysis

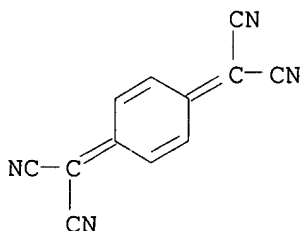
Polaron

(photoinduced electron transfer in mixed films of π -**conjugated polymers** and tetracyano-p-quinodimethane derivs.)

IT Radical ions

(cations, photoinduced electron transfer in mixed films of π -**conjugated polymers** and tetracyano-p-quinodimethane derivs.)

- IT Electron exchange and Charge transfer
(photochem., photoinduced electron transfer in mixed films of π -**conjugated polymers** and tetracyano-p-quinodimethane derivs.)
- IT Electric potential
(reduction, photoinduced electron transfer in mixed films of π -**conjugated polymers** and tetracyano-p-quinodimethane derivs.)
- IT **1518-16-7** 70359-39-6, 11,11,12,12-Tetracyano-9,10-anthraquinodimethane 120086-24-0 120086-25-1 120086-26-2 120086-27-3
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(electron acceptor; photoinduced electron transfer in mixed films of π -**conjugated polymers** and tetracyano-p-quinodimethane derivs.)
- IT 138184-36-8, Poly[2-methoxy-5-(2'-ethylhexyloxy)-1,4-phenylene vinylene] 171980-03-3
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(electron donor; photoinduced electron transfer in mixed films of π -**conjugated polymers** and tetracyano-p-quinodimethane derivs.)
- IT 99685-96-8, C60 Fullerene
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(reference compound; photoinduced electron transfer in mixed films of π -**conjugated polymers** and tetracyano-p-quinodimethane derivs.)
- IT **1518-16-7**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(electron acceptor; photoinduced electron transfer in mixed films of π -**conjugated polymers** and tetracyano-p-quinodimethane derivs.)
- RN 1518-16-7 HCAPLUS
- CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis- (9CI) (CA INDEX NAME)



L106 ANSWER 16 OF 16 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:650652 HCAPLUS
DN 121:250652
ED Entered STN: 26 Nov 1994
TI Multiple fluorescence labeling of immunoassay reagents with europium chelators
IN Diamandis, Eleftherios P.; Morton, Robert C.
PA Nordion International Inc., Can.

SO Can., 60 pp.
 CODEN: CAXXA4
 DT Patent
 LA English
 IC ICM C12N011-02
 ICS G01N033-533
 CC 9-10 (Biochemical Methods)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CA 1330061	A1	19940607	CA 1989-599628	19890515
PRAI	CA 1989-599628		19890515		

OS MARPAT 121:250652

AB A conjugate, for use in a labeling system, comprises avidin or streptavidin linked to a (submicron-size) carrier particle, e.g. of latex, having >15 amino groups on its surface which are individually capable of being labeled with an operable label, the carrier particle being capable of being linked to avidin or streptavidin to form the conjugate. The particle may a protein mol. or be coated with protein mols. having the amino groups on their surface. The protein may be thyroglobulin, bovine serum albumin, hemocyanin, myosin, apoferritin, catalase, a lysine copolymer, α 2-macroglobulin, leucine aminopeptidase, heavy meromyosin, or histone. Preferred labels are fluorescent lanthanide chelates, especially those containing 4,7-diphenyl-1,10-phenanthroline-2,9-dicarboxylic acid derivs. Eu³⁺ in optimal concentration induces formation of a streptavidin-based macromol. complex which amplifies the assay signal. Thus, in a FIA for α -fetoprotein (AFP), a sample solution was incubated in a microtiter well coated with antibody to AFP. After washing, the well was incubated with a biotinylated 2nd antibody, washed, and incubated with a streptavidin conjugate of thyroglobulin labeled with 4,7-bis(chlorosulfohenyl)-1,10-phenanthroline-2,9-dicarboxylic acid Eu complex. The sensitivity of this assay was 0.01 ng/mL.

ST fluorescence immunoassay streptavidin protein lanthanide; europium chelate FIA

IT Particles

(aminated, avidin or streptavidin conjugates; multiple fluorescence labeling of immunoassay reagents with europium chelators)

IT Isotope indicators

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses) (particle-bound; multiple labeling of immunoassay reagents with avidin- or streptavidin-conjugated)

IT Ferritins

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses) (apo-, conjugates, with avidin or streptavidin; multiple fluorescence labeling of immunoassay reagents with europium chelators)

IT Indicators

(**chemiluminescent**, particle-bound; multiple labeling of immunoassay reagents with avidin- or streptavidin-conjugated)

IT Rare earth metals, uses

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses) (complexes, conjugates, with avidin or streptavidin, particle-bound; multiple fluorescence labeling of immunoassay reagents)

IT Ligands

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses) (conjugated, with biotin; multiple fluorescence labeling of immunoassay reagents with europium chelators)

IT Albumins, uses

Hemocyanins
 Histones

Myosins
 Proteins, specific or class
 Thyroglobulins
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (conjugates, with avidin or streptavidin; multiple fluorescence
 labeling of immunoassay reagents with europium chelators)

IT Antigens
 Haptens
 Intrinsic factors
 Receptors
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (conjugates, with biotin; multiple fluorescence labeling of assay
 reagents with europium chelators)

IT Antibodies
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (conjugates, with biotin; multiple fluorescence labeling of immunoassay
 reagents with europium chelators)

IT Avidins
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (conjugates, with proteins; multiple fluorescence labeling of
 immunoassay reagents with europium chelators)

IT Immunoassay
 (enzyme, multiple labeling of immunoassay reagents with avidin- or
 streptavidin-conjugated)

IT Immunoassay
 (fluorescence, multiple fluorescence labeling of immunoassay reagents
 with europium chelators)

IT Indicators
 (fluorescent, particle-bound; multiple fluorescence labeling of
 immunoassay reagents with europium chelators)

IT Spectrochemical analysis
 (fluorometric, multiple fluorescence labeling of assay reagents with
 europium chelators)

IT Proteins, specific or class
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (folate-binding, conjugates, with biotin; multiple fluorescence
 labeling of assay reagents with europium chelators)

IT Meromyosins
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (heavy, conjugates, with avidin or streptavidin; multiple fluorescence
 labeling of immunoassay reagents with europium chelators)

IT Antibodies
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (monoclonal, conjugates, with biotin; multiple fluorescence labeling of
 assay reagents with europium chelators)

IT Amines, uses
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (poly-, particle-bound, avidin or streptavidin conjugates; multiple
 fluorescence labeling of immunoassay reagents with europium chelators)

IT Immunoassay
 (radioimmunoassay, multiple labeling of immunoassay reagents with
 avidin- or streptavidin-conjugated)

IT Proteins, specific or class
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (steroid-binding, conjugates with biotin; multiple fluorescence
 labeling of assay reagents with europium chelators)

IT Proteins, specific or class
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (thyroxine-binding, conjugates with biotin; multiple fluorescence

labeling of assay reagents with europium chelators)

IT Fetoproteins
 RL: ANT (Analyte); ANST (Analytical study)
 (α -, multiple fluorescence labeling of immunoassay reagents with europium chelators)

IT Macroglobulins
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (α 2-, conjugates, with avidin or streptavidin; multiple fluorescence labeling of immunoassay reagents with europium chelators)

IT 9002-61-3, Chorionic gonadotropin 9002-62-4, Prolactin, analysis 9002-71-5, TSH
 RL: ANT (Analyte); ANST (Analytical study)
 (multiple fluorescence labeling of immunoassay reagents with europium chelators)

IT 56-87-1D, L-Lysine, **polymers, conjugates** with avidin or streptavidin 58-85-5D, Biotin, conjugates 9001-05-2D, Catalase, conjugates with avidin or streptavidin 9001-61-0D, Leucine aminopeptidase, conjugates with avidin or streptavidin 9013-20-1D, Streptavidin, protein conjugates
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (multiple fluorescence labeling of immunoassay reagents with europium chelators)

IT 81-88-9D, Rhodamine, conjugates with avidin or streptavidin 521-31-3D, Luminol, conjugates with avidin or streptavidin 605-65-2D, Dansyl chloride, conjugates with avidin or streptavidin 2321-07-5D, Fluorescein, conjugates with avidin or streptavidin 22559-71-3D, Acridinium, esters, conjugates with avidin or streptavidin 38183-12-9D, Fluorescamine, conjugates with avidin or streptavidin
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (particle-bound; multiple fluorescence labeling of immunoassay reagents)

IT 7429-91-6D, Dysprosium, chelates 7440-19-9D, Samarium, chelates 7440-27-9D, Terbium, chelates 7440-53-1D, Europium, chelates 7440-54-2D, Gadolinium, chelates 102331-59-9D, derivs., lanthanide chelates 112076-76-3D, lanthanide chelates
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (particle-bound; multiple fluorescence labeling of immunoassay reagents with europium chelators)

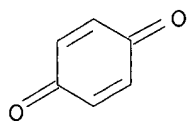
IT 9001-78-9D, Alkaline phosphatase, conjugates with avidin or streptavidin 9003-99-0D, Peroxidase, conjugates with avidin or streptavidin 9031-11-2D, β -Galactosidase, conjugates with avidin or streptavidin 14158-31-7D, Iodine-125, conjugates with avidin or streptavidin, uses
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (particle-bound; multiple labeling of immunoassay reagents)

IT 76931-93-6D, SATA, conjugates
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction with activated streptavidin; multiple fluorescence labeling of immunoassay reagents with europium chelators)

IT **106-51-4**, p-Benzoquinone, reactions 68181-17-9, SPDP 103708-09-4, Sulfo-SMCC
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (streptavidin activation with; multiple fluorescence labeling of immunoassay reagents with europium chelators)

IT **106-51-4**, p-Benzoquinone, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (streptavidin activation with; multiple fluorescence labeling of immunoassay reagents with europium chelators)

RN 106-51-4 HCAPLUS
 CN 2,5-Cyclohexadiene-1,4-dione (9CI) (CA INDEX NAME)



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